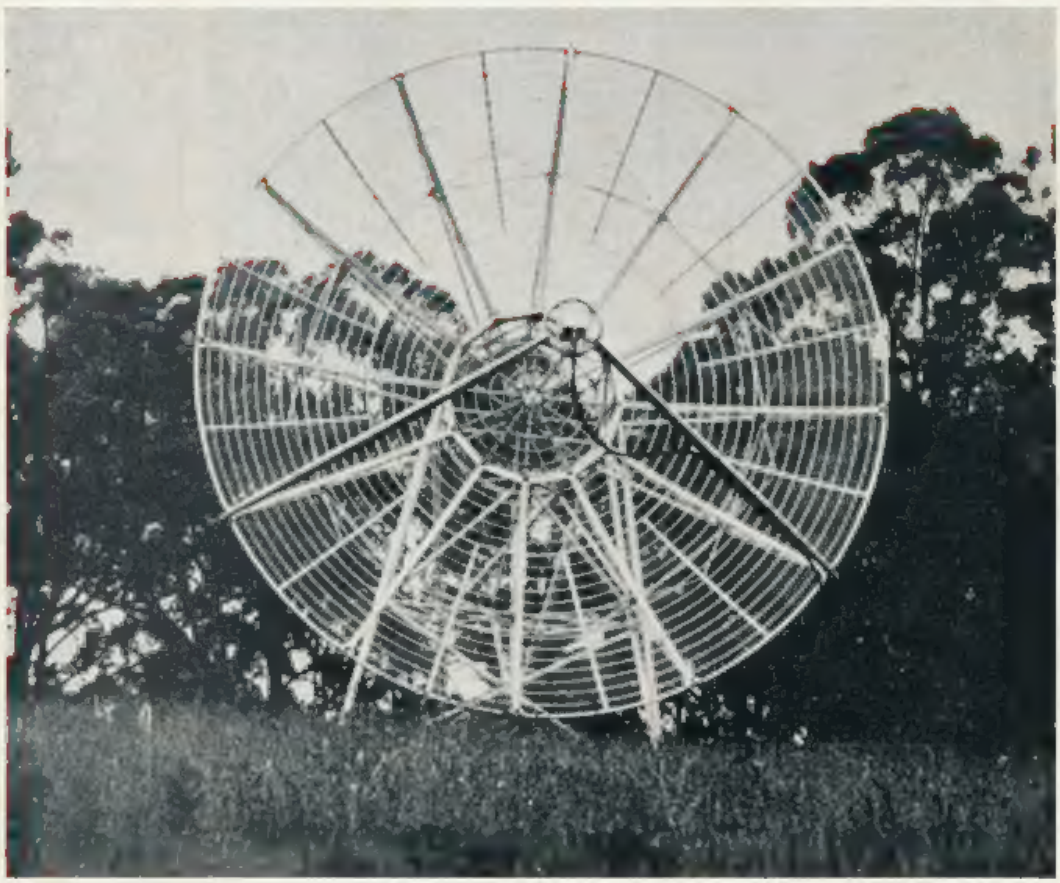
AMATEUR RADIO

FEBRUARY 1962



Vol. 30, No. 2

2/-

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1D5GT	5/-	5 a	£1
1D8	7/6	3 a	£1
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1H5	5/-	5 a	£1
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3Q4	10/-		
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5Z3	17/6		
6A3	7/6	3 a	£1
6A6	7/6		
6A7	10/-		
6AJ5	7/6	3 a	£1
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6AM5	(EL91)	10/-	
6AM6	(EF91)	10/-	
6B4	10/-		
6B7	10/-		
6B8	17/6		
6BE6	12/6		
6C4	5/-	5 a	£1
6C5	5/-	5 a	£1
6C6	5/-	5 a	£1
6C8	10/-		
6D6	5/-	5 a	£1
6E5	5/-	5 a	£1
6F5	7/6		
6F6	12/6		
6F7	10/-		
6G6	7/6	3 a	£1
6G8G	17/6		
6H6	Glass	2/6	
6H6	Metal	3/6	
6J6	10/-		
6K7	5/-	5 a	£1
6K8G	20/-		
6L7	5/-	5 a	£1
6R7	7/6	3 a	£1
6T7	7/6	3 a	£1
6Z7	7/6	3 a	£1
6SA7	10/-		
6SC7	7/6		
6SF5	7/6	3 a	£1
6SF7	7/6	3 a	£1
6SH7	4/-	5 a	£1
6SJ7	12/6		
6SK7GT	12/6		
6SL7GT	12/6		
6SQ7	12/6		
6SS7	7/6	3 a	£1
6V4	11/4		
6X5	10/-		
6Y6	5/-	5 a	£1
7A4	5/-	5 a	£1
7A8	2/-	11 a	£1
7B8	7/6		
7C5	5/-	5 a	£1
7C7	2/-	12 a	£1
7E6	3/6	7 a	£1
7F7	5/-	5 a	£1
7W7	2/6	10 a	£1
7Z4	7/6	3 a	£1
12A6	4/-	6 a	£1
12SA7GT	10/-		
12AH7	5/-	5 a	£1
12C8	5/-		
12J5	5/-	5 a	£1
12K8	5/-	5 a	£1
12SF7	5/-	5 a	£1
12SG7	5/-	5 a	£1
12SK7	5/-	5 a	£1
12SL7	7/6	3 a	£1
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14A7	3/6	7 a	£1
25L6	5/-		
117Z6	5/-	5 a	£1
1625	5/-	5 a	£1
1626	5/-	5 a	£1
1629	5/-	5 a	£1
30	1/3		
35T	30/-		
83	15/-		
717A	7/6	3 a	£1
726A	10/-		
807	7/6	3 a	£1
808	15/-		
815	15/-		
830B	15/-		
832A	19/6		
866	32/6		
954	5/-	5 a	£1
955	5/-	5 a	£1
956	5/-	5 a	£1
958A	2/6	10 a	£1
2051	5/-		
9003	7/6	3 a	£1
AV11	2/11		
DL75	2/6	10 a	£1
EA50	2/-	10 a	£1
EC91/6AQ4		10/-	
EF36	5/-	5 a	£1
EF39	5/-	5 a	£1
EF70	5/-	5 a	£1
EF72	5/-	5 a	£1
EF73	5/-	5 a	£1
EY91	5/-		
QV04/7	15/-		
QE04/10	15/-		
QQE06/40		97/6	

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VR53	5/-	5 a	£1
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VR102	5/-	5 a	£1
VR103	5/-	5 a	£1
VR136	2/-	12 a	£1
VR150	10/-		
VT52	5/-		
VT127	4/11	5 a	£1
VT501	7/6	3 a	£1
V65	5/-		

"AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

FEBRUARY 1962
Vol. 30, No. 2

WI Broadcasts:

VK2WI: Sundays, 1100 hours EST, simultaneously on 3573 Kc., 7146 Kc., 50.16 Mc. and 145.13 Mc.; Intrastate call-backs taken on 7030 Kc. VHF 1930 hours EST on 50.16 Mc. and 145.13 Mc.; call-backs taken on 2 metres.

VK3WI: Sundays, 1030 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.25 Mc. Intrastate hook-ups taken on 7135 Kc.

VK4WI: Sundays, 0900 hours EST, simultaneously on 7146 Kc. and 14.342 Mc. Intrastate hook-ups taken on 7105 Kc.

VK5WI: Sundays, 0900 SAT, on 7146 Kc. Relays on 3.7, 14.2, 50.02, 144 and 288 Mc. Intrastate hook-ups taken on 7125 Kc.

VK6WI: Sundays at 0930 hours WAST, on 7146 Kc. Intrastate hook-ups taken on 7095 Kc.

VK7WI: Sundays at 1000 hours EST, on 7146 Kc. and 3672 Kc. Intrastate hook-ups taken on 7115 Kc.

★

OUR COVER

Situated high in the Mt. Dandenong Ranges (Victoria), nestling among the trees, is a large Kennedy Dish used by the P.M.G. as part of the Tasmanian "trunk line" circuit.

COMMENT

★

THE NATIONAL FIELD DAY

February is here again and with it comes the annual event of the W.I.A.—the National Field Day Contest. This Contest has been running for a number of years but has never quite reached the popularity it deserves. Some of the reasons for this state of affairs are probably the trouble to get together the necessary gear, the camping-out in the open required, poor conditions on the bands and the like, but mainly it appears to be a simple case of general lack of interest.

In these days of modern transport and caravans, small lightweight equipment with transistorised power supplies and other modern innovations, surely the above reasons are not entirely valid ones for neglecting this important event. It is important because in times of emergency, it has been proven that the Amateur who has portable equipment ready to move to a trouble spot in a hurry can be of inestimable value to the community at large. When all is said and done, it is this type of public service that has given the right publicity to the Amateur and the right to class his services under the international title of THE AMATEUR SERVICE.

Various means have been tried in the past by the Federal Contest Committee to popularise this Contest by judicious changes to the operating conditions and scoring, but no changes will help if the Amateur himself does not evince some practical interest. This Contest is a challenge. It challenges the Amateur to produce highly efficient light weight equipment and to improve his operating techniques in order to beat his competitors and by so doing, increases the knowledge in the art.

The Federal Council and your Executive have explored new ideas in order to make this a bumper Contest, and it is now possible that this Contest may become the memorial to the late John Moyle and receive the fillup it requires. This seems a lasting way of perpetuating his memory as no other scheme can do; furthermore, John's widow believes this is a fitting way to remember him because of his own keen interest in portable and mobile gear. If this proposal is finally approved by Council, we believe this will become the most popular Contest in the Australian Amateur's calendar.

As the Contest on the 10th and 11th of this month will probably be the last under its old name, give it a good send-off by getting that gear out of the corner of the shack, come away into the fresh air and enjoy the fun and competition of a Contest away from the shack. See you on the 10th and 11th? Good—and the best of DX.

FEDERAL EXECUTIVE, W.I.A.

CONTENTS

R1155 Receiver Modification 3
Semiconductor Rectifiers 7
A Junior Short Wave Receiver—19-49 Metres 11
Negative Cycle Loading 11
Hints and Kinks: Frequency Jumping V.f.o's. 12
VK2 to ZL3 on 144 Megacycles 12
Radio Details of Russia's Spaceship 10
Two Canadian Awards:— The St. Lawrence Seaway Award 21
The Canadian Award 21
Amateur Radio a Thrill for the Lads 13
Errata 15
Trade Review: "Ian McMillan TX150/75" Transmitter 15
New Technique in Gas Chromatography Analysis 15
Federal and Divisional Monthly News Reports 24
DX 16
Sideband 23
SWL 17
VHF 19

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R1155 RECEIVER MODIFICATION

G. W. CANNING, VK3ZIC*

TWO recent articles in "A.R." have interested me because they concern the receiver in use at this location. They were the articles in the Sept. and Oct. 1960 issues and their vagueness has prompted me to writing this article.

Such statements as "a little careful snipping," which I tried when I first obtained the set, resulted in disaster for quite a few components and it was not until I obtained a copy of the handbook that I realised just how careful this "snipping" had to be. Other slight errors and misleading statements I thought should also be corrected so the following handbook data was collected.

BRIEF TECHNICAL DETAILS

Purpose.—Designed for use in aircraft, A.R.S. launchers, radio vehicles and as an after thought when somebody made a mistake in the type of flux used for soldering, ground installations. Provide communication and direction finding facilities of c.w., m.c.w. and r.t. (but not on all ranges; d.f. only on ranges below 3 Mc.).

Ranges:—

R115L & N	Others
18.5 to 7.5 Mc.	18.5 to 7.5 Mc.
7.5 „ 3.0 „	7.5 „ 3.0 „
3.0 „ 1.5 „	1.5 „ 0.6 „
1.5 „ 0.6 „	0.5 „ 0.2 „
0.5 „ 0.2 „	0.2 „ 0.075 „

Sensitivity Figures.—These are taken for an output of 50mw. into 5,000 ohms under matched input conditions:—

60	Kc.	— 63	μV.
185	„	— 22	„
210	„	— 16	„
500	„	— 7.1	„
650	„	— 14.2	„
1430	„	— 12.6	„
1.55	Mc.	— 11.3	„
3.33	„	— 18.0	„
7.0	„	— 3.5	„
8.0	„	— 22.2	„
16.0	„	— 9.0	„

Selectivity: 4 to 6 kc. for 6 db. down.

Output Impedance: 5,000 ohms for headphone use.

Valve Line-up:—

Purpose	Valve	Equiv.	Near
DF switching	2 x VR99A	ECH35	
RF amplifier	VR100	KTW62	6U7G
Converter	VR99A	ECH35	
IF amplifier	2 x VR100	KTW62	6U7G
AVC and BFO	VR101	MHLD6	6B6G
Det., 1st Audio, Meter Limiter	VR101	MHLD6	6B6G
Meter switching	VR102	BL63	6F8G
Tuning indicator	VR103	Y63	

Power Output: 200 mW. into 5,000 ohms.

Dimensions: Length 16-7/16", width 9⅜", height 11¾".

Weight varies between 26 and 32 lbs., depending on particular version—some have steel and others aluminium chassis.

The valve line-up given is that used in the 1155s used by the Australian services and there was, as far as I could see, little degrading of performance (if any) by substituting a 6U7 for the VR100 in the r.f. stage (there being tons of gain here) and 6B6s for the VR101s. If they are substituted for the i.f. amplifiers the sensitivity will drop. This is due mainly to the difference in gm., 2.8 for VR100s to 1.6 for 6U7s. (However, some 6U7s are well up to the mark.)

It can also be seen for the band coverage table that the R1155 L and N are the most desirable types to obtain. These are scarce in Australia; being made for A.S.R. launchers of which Australia only had a few; so the next best is one of the numerous others. (Coil boxes for the L and N types are available from certain disposals sources.)

The receiver I obtained, and on which most of these modifications have been tried at some time or other, was noisy, definitely not in mint condition, and looked as though it had been in storage for several years. Most of the noise I attributed to the condition of the components in the set and the tubes. However, I would not say "give it a new suit of valves." The best idea is to remove them all and get them tested for emission and **mutual conductance** as well as leakage currents. I emphasise the gm. test here because the receiver is mainly r.f. or i.f. stages and their efficiency depends on the gm. of the valve used in the stage.

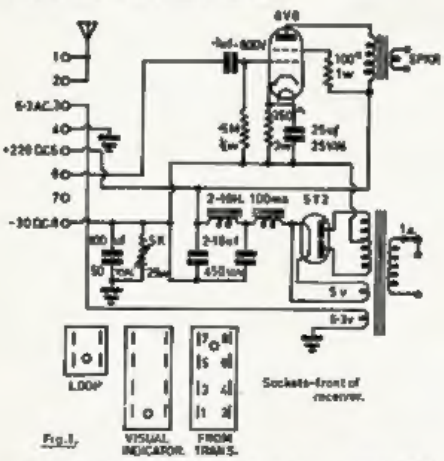

Fig. 1.

The receiver here now has a readable signal of less than 0.5 μV. (sig. gen. won't measure any lower) and a bandwidth very much less than that specified. This is principally due to the use of all miniature valves; admittedly not hot bottles by modern standards, but the best of their type, and type of r.f. stage. (I'll get really howled down about it when I get to it.) There are other designs which give more gain for much the same noise figure but they load the aerial circuit too much and are unstable in this particular component layout. Most of them have been tried and rejected because of these points.

Now to get around to the modification and I suppose first up you will want to get the thing going. So, I'll give you a power supply, power amplifier, and bias network to make it work. This is shown in Fig. 1, as are the connections to the Jones' plugs. A word of warning: **do not connect anything to pin 7, it is hot**—as are the pins on the visual indicator socket, so if you are going to use the set as is for the moment put a covered dummy plug in the visual indicator socket.

The set should operate now without any modification unless there is something wrong with the set.

The operation of the master switch is simple, there being only two positions that concern normal use. These are: Position "O" (normally called Omni, I've yet to find out why), when the r.f., i.f. and mixer gain are controlled by the r.f. control (audio being flat out). In the position marked "AVC," the r.f., i.f., etc., gain is a.v.c. controlled and the audio gain is controlled by the volume control. (The r.f. and audio pots. are ganged.) The other three positions are concerned with d.f. work and, unless of particular interest, are of little use.

Most of the modifications that were done here were done so that the set was off the air for the shortest possible time. In the first series, that of removing the d.f. gear, the set should be operable at all stages. So here goes and be prepared for a lot of work.

REMOVAL OF D.F. EQUIPMENT

The following valves can be removed:

V1 and V2 (VR99As), right hand side of chassis looking from the front of the set.

V9 (VR102) left hand side of set between 2nd i.f. tube and b.f.o. box.

If V1 and V2 are in good condition they can be kept as spares for the converter, being of the same type. As yet I haven't found a use for V9, a twin r.f. triode, so if you can, good luck to you.

The sockets for these tubes can be removed or re-used, I used them for the power supply (in-built) and a noise limiter. Whether they are used or not all wires to them and components on them should be removed and completely removed from the set.

Don't be lazy and just clip them off because quite a few of them are hot and if left floating around could be disastrous. These include:—

(1) All connections to the "Visual Indicator" socket; remove this socket when all the wires are off. It will take a bit of work, but I can assure you it does come out.

(2) All connections to the "Loop" socket, remove this while you are at it.

(3) The connection to pin 7 (top l.h. of "Transmitter" plug when viewing from front).

* 21 Woods Street, Laverton, Vic.

(4) All connections to rear section of b.f.o. box, both above and below chassis.

(5) All connections to wafer "e" and "c" of the master switch. Wafer "e" is the rear wafer.

(6) All connections to the switch wafer, inside the coil box, further away from gears. At this stage do not touch the connections to the other side of this wafer (see Fig. 2).

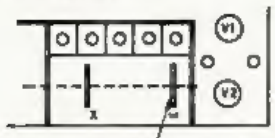

Fig.2. Remove connections to this wafer.

The components associated with these valves are:—

C41, C49, C50 (3 x 0.1 μF.), chassis mounting condenser located between V1 and V2.

C51, C52, C53 (3 x 0.1 μF.), also between V1 and V2.

C55 (0.5 μF.) and C56 (8-105 pF.) underneath aural sense switch just to rear and below tuning indicator.

C42 and C43 (25 pF.), C44 and C45 (240 pF.), C46 and C47 (80 pF.), R46 (1.5K), all on tagboard on end of coil box near V1 and V2. Remove as a complete assembly.

C23 and C24 (0.0005 μF.), two mica condensers on V9 end of coil box.

C7 (0.005 μF.), paper condenser on V9 end of coil box.

C48 (200 pF.), at rear of master switch.

R56 (240 ohms), pin 8 of V2 to chassis.

R57 (0.56 meg), underneath aural sense switch.

R47 (27K), R48 (3.3K), R49 (27K), R50 (3.3K), on tag board above aural sense switch. Remove with aural sense switch.

R52 (6.8K), R53 (0.56 meg.), R54 and R55 (56K), L23 (transformer), C54 (0.05 μF.), underneath tuning indicator in one assembly. To remove, V10 must be removed from holder and some wrestling done.

R65 (10K), pin 5 off V9 to two mica condensers on V9 end of coil box.

R66 (10K) top cap of V9.

R70 (1000) pin 5 of V8 (audio stage) to rear of b.f.o. box.

R6 (1500) pin 8 of V8. Remove only this resistor, leave all other connections as is.

R5 (1000) and R7 (270), top resistors on tag board on top of chassis near last i.f. can.

R51, meter balance control, top l.h. of front panel.

R23, meter amplitude control, top l.h. of front panel.

C3, C4, C5, C18, C20, C21, C22, C107, L26, L27, L28, R24, R25, components in rear section of b.f.o. box.

HFC5, top caps of V1 and V2.

L24 (2 off), large two-section coil mounted on bracket front of coil box near V1 and V2. Remove them and bracket as complete assembly.

L1, C99 (100 pF.), these are located inside the coil box, when looking from rear of set assembly, located at top r.h. corner of r.h. side of coil box with set inverted, i.e. valve downward.

After all these components are removed you will notice that there is practically nothing left in some parts of the set. The master switch will only have effect in the positions "O" and "AVC" so this can be replaced by a two-position, two-pole switch, preferably moved to the place previously occupied by the meter balance control. In my receiver this switch has been removed completely, the r.f. gain control pot removed and a.v.c. left on permanently. However for those that still require it, here goes.

REMOVAL OF MASTER SWITCH

The master switch wafers are numbered from the front panel in the series a, b, c, d and e, with the letters f (front of wafer) or r (rear of wafer) following it. I'll use this system of numbering throughout the modification.

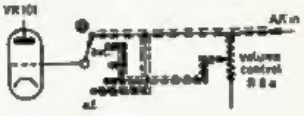

Fig.3.

All wires, at this stage, should be removed from wafer "e" and wafer "c". Between wafer d.f. and b.f. will be found a 1,000 pF. and a 200 pF. condenser. These are respectively in series with the fixed aerial h.f. coils and trailing aerial m.f. coils, via the two sections of b.f., d.f. and the aerial switching wafer in the coil box (wafer "x"). These two condensers can be removed, the two leads from the moving arms of the d.f. sections connected to either pin 1 or pin 2 of the "From Transmitter" Jones' plug. I used a piece of co-axial cable on to a coarse plug and joined these two leads together inside the coil box. The set should still work with very little difference in performance.

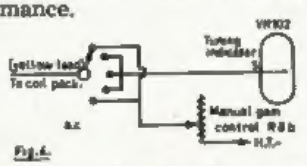

Fig.4.

All wiring to front and rear of wafers "b" and "d", if not already removed, may now be removed. This leaves wafer "a" to deal with. I'll show the circuit of this wafer (Fig 3—front section, Fig. 4—rear section) because it will make the necessary connections to the two-pole switch obvious.

The circuit to be used with the switch (which can be obtained by putting another couple of contacts on the old meter deflection switch) is shown in Fig. 5. It can be seen that by moving the switch to the other side of the panel the audio leads are very much shortened, as are some of the r.f. gain control leads.

Do not touch any of the leads on the other terminals of the volume controls. To shift some of these leads will require a fair amount of work but in the long run it is well worth it. This makes the master switch redundant so it can now be removed.

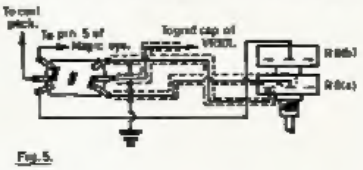

Fig.5.

Also when the aerial lead is changed, two h.f. chokes and two resistors R62 and R63 (2,200 ohms) can be removed. These are connected to pins 1 and 2 of the now power input plug.

BIAS VARIATION FROM MIXER

The next modification is to remove any form of bias variation from the mixer. This is done for two reasons: the most important is that bias variation does vary the local oscillator frequency. When a.v.c. is being used with s.s.b. signals the signal is very hard to resolve and reports of frequency modulation can be given with some of the modulation systems in use today unless a.v.c. is removed from the mixer stage. I know one well known Amateur who consistently gives reports of f.m. with all modulation systems other than correctly adjusted anode-screen modulation and as yet I have not been able to detect any on these same signals—even with b.f.o. on. So watch it you critical reporters.

To remove this control, lift the junction of R38 (100K) and R10 (150K) and earth the end of R38 which was just lifted. Reconnect R10 to its original point.

These two resistors will be found inside the coil box, behind the two valve sockets in the l.h. partition (looking from the rear with the set inverted). R38 is to the right of the multiple condenser and R10 to left on the tag board. R10 should be in front of another 100K resistor (R45). This removes a.v.c. but it also removes bias from this stage, so a 250 ohm resistor, bypassed by a 0.1 μF. 200v. condenser, must be installed between pin 8 of V4 (left hand of the two valve sockets) and earth. This pin is already connected to earth, so this connection must be removed and these two components put in.

The next thing I did was to place cathode bias on all the valves. This takes a fair bit of doing but it does make things much easier when some refinements may be added. It will also have the set off the air for some time as once started, there is a fair bit of it.

CATHODE BIAS ON ALL VALVES

I'll do it in stages so that the receiver is off for as little as possible, but remember **the voltage between chassis and h.t. negative must remain at —30v.** so adjust it as we proceed.

Firstly the audio stage.

(1) Remove C105 (0.1 μF.) under the clamp near under-chassis shield of the last i.f. can. R26 (100K) outside end of tag board near where C105 was. Earth the terminal which was the junction of C105 and R26.

(2) Remove R22 (1K) from pin 8 of audio output tube V8 (VR101) and its other connection. From pin 8 of V8 put a 2,200 ohm ½w. resistor to earth and a 25 μF. 6v. electrolytic as cathode by-pass.

(3) Remove R20 (56K), third resistor from outside end of tag board which held R26 (include R26 in this count) and replace with a 100K ½w. resistor.

(4) Remove R67 (22K) on top of vertical tag board upper side of chassis

near last i.f. can and short out the terminals.

(5) Remove C25 (0.001 μF.) from pin 3 of V8.

Now comes the big part. If you start this section, you will have to finish it; until you do, the set will have to stay off the air, because until it is finished the a.v.c. and r.f. gain control are not operating.

Starting at the power plug connect pin 8 to pin 4.

Remove R1 (2K), C1 and C92 (2.5 μF.), and C94 (1 μF.), large multiple block condenser and resistor below the tuning indicator.

Remove the lead associated with C92. This connects to the heater line.

Remove R2 (1.2K) near where the master switch was on top of chassis.

Remove R3 (1.2K), second resistor from outside end tag board with R26.

Remove R4 (120), second resistor from inside end.

Remove R64 (200 or 100), third resistor from inside end.

Remove R69 (100), may not be used, but if used, in r.h. end coil box near most r.h. switch wafer (w).

Connect a 1,600 ohm resistor from pin 8 of the tuning indicator to earth and lift the present connection.

Remove R9 (2M) from end which does not connect to C103 and connect this end to earth. R9-C103 combination is located alongside the output transformer, mounted on the front panel. C103 is the mica condenser (100 pF.).

Earth end of R12 (27K) not connected to R11 (150K) and trace lead that did connect to here back to source. This should go to R8(b), the r.f., i.f. gain control. Don't remove this lead as it will connect to the bottom of i.f. amp. cathode resistors, however earth the other side of the r.f., i.f. gain control and remove the lead which did connect to this point.

That removes most of the excess gear so now to put some essential stuff in. Lift pin 8 of the two i.f. amplifiers and the r.f. amplifier off earth and in each case connect a 0.01 μF. 200v.w. condenser to earth and a 300 ohm resistor from pin 8 to the lead that did connect to R12 and is still connected to the r.f., i.f. gain control. The only point to watch is that the 0.01 μF. condensers are actually at the valve sockets, the resistors are not quite as important.

Well, after wading through that lot, with a bit of luck you can plug the set in, switch on, and it might work. When I first did it, I wasn't quite so lucky, I hadn't done everything and it did not work.

When operating in the a.v.c. position a means of shorting out R8(b) will have to be included on the switch. Another pole will be needed here to do the job, but that should be well within the scope of most.

I have not tried to point out how to lay components out because everyone has his own choice and everyone may not have the same size and shape of components that I had.

That is all the modifications to the basic set, from now on modifications are by choice and usually involve additions to the basic set and changing of valves, etc.

MINIATURE VALVES

What I have done here is to completely change the valve line-up to miniatures, with consequent changes in some circuit components. I also tried various other types of circuits in the r.f. section. One of these was to substitute a 6SN7 cascode r.f. stage for the VR100, with the help of an octal plug and socket.

The set-up worked, much to my amazement, and in my opinion was better than the VR100. After discussing this with various people I found out that the 6SN7 is rated as an oscillator mixer combination up to 100 Mc. I was going to try it in my receiver but decided to go all miniature instead.

I decided to try the 6ES8, 6BL8 line-up but the layout of the circuit in the 1155 is not suited to these valves and I finally finished up with the circuit shown in Fig. 6, with a pair of 6J6s. These are mounted on a copper plate complete with everything and the necessary connections made to tag-strips. This plate sits in a cut-out where the r.f. stage used to be.

I also mounted a 6AM5 as the p.a. stage on a bracket underneath the tuning condenser and brought the speaker output leads to a plug where the original plugs were. These have all been removed and a piece of dural cut to fit with a co-axial socket, speaker plug and standby switch mounted on it.

The power supply is now mounted just above this with a 120 mA. transformer, 5Y3, VR105/30, 16H. choke with 16 μF. condensers. The VR105/30 is used to regulate the voltage on the local oscillator and b.f.o.-product detector.

Above where the plugs were, I have placed an S meter (if they can be called such) using a couple of pots, resistors and an old temperature gauge that I picked up for 5/-.

So now the receiver line-up is:—

6J6—cathode coupled r.f. amplifier.
6J6—oscillator-mixer combination.
6BA6—1st i.f. amplifier.
6BA6—2nd i.f. amplifier.
6AV6—detector, a.v.c., 1st audio.
6BE6—product detector and b.f.o.
6AM5—power output.
5Y3—rectifier.
VR105/30—voltage regulator.

As far as I can see I have, for my initial £13 (they'll cost you £25 now) and a lot of work, one of the cheapest receivers for its quality that you can buy. The modifications are by no means anything like finished, there will always be something new to try out, but in the meantime it is being used and those that have heard it have been impressed. ●

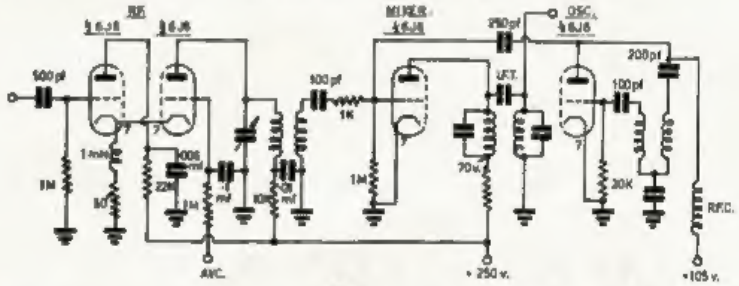

Fig. 6.

The present r.f. and mixer-osc. stage in use here at the moment. It is important for low noise from the mixer that its anode volts should not exceed 70v. If possible obtain a selection of 6J6s and use those with the higest gm. and best matching between sections. They are notorious for not being as per the book.

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The Characteristics, and How To Use Them, of—

SEMICONDUCTOR RECTIFIERS*

DAVID T. GEISER, WA2ANU

SEMICONDUCTOR rectifiers are becoming popular in Amateur equipment, both in the home and in the car. While this type of component has a justifiable reputation for reliability, in actual application the semiconductors have certain weaknesses that must be considered before their inherent reliability can be attained. This article briefly discusses some of the characteristics of the rectifiers and lists some precautions helpful in their use. Discussion is limited to the germanium and silicon types.

• The semiconductor power rectifier is gradually losing that "expensive" tag, and the cheaper it gets the more attractive it becomes in transmitting power supplies. But some Hams have learned, to their sorrow, that you can't take the liberties with crystal diodes that you can with many tube rectifiers. Here's why—and how to avoid trouble.

HOW A RECTIFIER WORKS

A rectifier is a component that conducts electricity better in one direction than the other. Any electrical part that meets this requirement can be used as a rectifier. Many varieties of rectifiers are or have been used. Old timers may remember the electrolytic rectifiers and detectors that were used on occasion between 1900 and 1930, in which metals and chemical solutions were combined in forms very similar to present-day electrolytic capacitors. Mechanical rectifiers have been used when the characteristic of the input electrical wave was known (like ordinary a.c.) and switches were closed only when the current was flowing in a particular direction. The car radio synchronous vibrator used in the era before transistor radios was an excellent example of this type. However, vacuum-tube and mercury-vapour rectifiers have almost entirely replaced the mechanical and electrolytic types because, having electron-triggered or electron-flow methods of conduction across the open space in the tube, these rectifiers only conduct with one polarity of applied voltage.

Like the electron tube, the semiconductor rectifier also operates on the principle of electron attractions. A crystal is formed of silicon or germanium (Fig. 1) with impurities added in one region differing from those in the adjacent regions. The result of these impurities is that one part of the crystal structure has more electrons than the structure calls for, while the other region has too few. The vacant parts of the structure of the second region are called "holes". The electrons are negative charges of electricity, and the holes are positive charges. (Where a material has neither holes nor electrons that can be easily moved by applied voltage, the material is an insulator.) The region of extra electrons is called the "N" region, that with extra holes is the "P" region.

The boundary between the regions, or P-N junction, is where the rectification takes place. If the P region is connected to the positive terminal of a battery while the N region is connected to the negative terminal, the charges will cross the junction and be replaced by charges from the battery. If the battery is reversed, the charges will tend to be drawn away from the junction by the battery, and there will be no free charges in the immediate vicinity of the junction to carry current across it. This makes the junction look like an open circuit when "reverse" polarity is applied to the rectifier, and automatic rectification takes place with voltage polarity change.

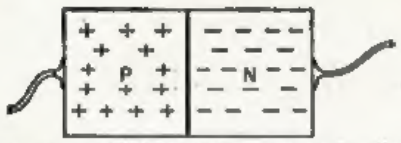


Fig. 1.—Rectifying semiconductor junction with excess electrons (N region) and electron vacancies or "holes" (P region).

POWER LOSS

The semiconductor rectifier is not perfect. The differences in material on opposing sides of the P-N junction make it slightly difficult for current to cross the junction when only a small forward voltage is applied. Germanium usually requires about a fifth to a half volt in the forward direction before full current will flow, while silicon requires six-tenths of a volt to a volt for each junction. This voltage drop required to cause current flow means that power is lost in the junction (watts = volts × amperes) and some heat will develop. The semiconductor rectifier is attractive because the voltage and power loss are less than in many other kinds of rectifiers.

Semiconductor rectifiers are not perfect in the reverse direction, either. Fig. 1 shows the electrons and holes as if their regions were exclusive, but there are always a few holes in the electron region, and a few electrons in the hole region. A semiconductor region is **mostly** P or **mostly** N, in the same sense that a town may be Democrat or Republican. The effect is that of the majority. Also, small breaks in the crystal structure make current carriers available. These carriers, if located near the P-N junction, will cross it when reverse polarity voltage is applied and permit reverse current flow. In spite of this, modern semiconductor rectifiers that are rated for one ampere commonly have less than a milliampere reverse current at room temperature. High reverse voltage multiplied by leakage current also represents power loss that appears as rectifier heating.

Temperature has a very important effect on leakage current, for as the material of the semiconductor warms, the unwanted carriers become more active, and more of them will contribute to leakage current. A common rule-of-thumb is that the leakage current will double with each 18-degree Fahrenheit rise in temperature. This effect is reversible; that is, as the temperature drops, the leakage current will drop to almost its original value unless the rectifier has been damaged. Too much heat will destroy the rectifier. The heat may come from either internal power dissipation or from outside. It is best to keep germanium below 200°F. and silicon below 300°F. for long life.

CIRCUITS AND THEIR EFFECT

Three types of rectifier circuits (Fig. 2) may be expected to be found in Amateur equipment. Table 1 lists a number of conditions that the circuits impose on the rectifiers. The chart expresses the voltages, currents, and powers in terms of the d.c. output voltage, current, and power. Thus, where peak inverse (reverse) voltage impressed on the rectifiers when the d.c. output voltage is 1,000 volts would be 3,140 volts. Naturally, the rectifier in such a circuit should be able to stand this inverse voltage.

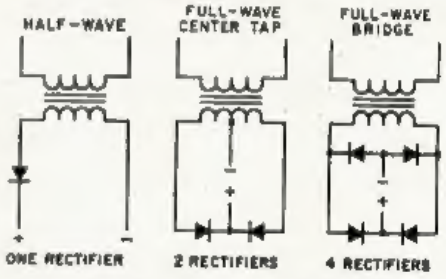


Fig. 2.—Several common single-phase rectifier circuits (see Table 1). Series strings of rectifiers may be used for increased voltage ratings where single rectifiers are shown.

Table 1 deals only with cases where the rectifier (semiconductor or tube) is feeding pure resistance or an inductance above the critical value.[1] When the rectifier is connected directly to a capacitor, the capacitor has a tendency to look like a short circuit during charging, both initially and on every rectifying cycle. Most rectifiers, and particularly semiconductors, have ratings for maximum surge current, both

* Reprinted from "QST," July 1961.

1—See the "Power Supply" chapter of "The Radio Amateur's Handbook."

for the initial surge (one cycle or a few cycles) and for repetitive surge—that is, the charging that occurs on the conducting part of each cycle after the filter capacitor is once charged.

The source of power, whether transformer or line, should have enough resistance or inductance added to it in series to limit the surge currents to the maximum safe value.

With a capacitor-input filter, the peak inverse voltage may range up to two times the peak voltage developed across the filter, depending mainly on how heavily the rectifier output is loaded.

Rectifier Circuit Conditions

Circuit	1	2	3
D.c. volts out	1.00	1.00	1.00
Peak volts out	3.14	1.57	1.57
Rectifier peak inverse volts	3.14	3.14	1.57
D.c. current out	1.00	1.00	1.00
D.c. current per rectifier	1.00	0.500	0.500
R.m.s. current per rectifier (resistive)	1.57	0.785	0.785
(inductive)	Res. only	0.707	0.707
Peak current per rectifier (resistive)	3.14	1.57	1.57
(inductive)	Res. only	1.00	1.00

Table 1.

CONNECTING RECTIFIERS IN SERIES FOR HIGH VOLTAGE

The low cost of the lower-voltage silicon rectifiers, in particular, has provoked the thought of series connection for high-voltage operation. This is quite possible, provided the characteristics of the particular pieces are known; the rectifier manufacturers commonly use series connection to make high-voltage stacks.

Rectifiers tend to behave in either of two ways when subjected to high reverse voltage, as shown in Fig. 3. In either of the cases a voltage is finally reached where the voltage within the rectifier forces the material to become conducting. Some rectifiers have practically no conduction until a critical voltage is reached, and then the leakage current increases hundreds of times with a rise of a very few volts. This is typical of small-area silicon junctions. Other rectifiers have a continual and usually more rapid increase in leakage current with increase in reverse voltage, showing a gradual rather than abrupt increase into high reverse current as high reverse voltage is reached—typical of germanium and large-area silicon rectifiers.

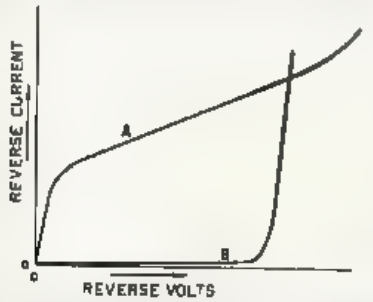


Fig. 3.—Rectifier A leakage current increases gradually when reverse voltage is increased, while B exhibits a sharp increase at a particular voltage. A is typical of germanium and large-area silicon units, while B represents many small silicon rectifiers.

In both cases, immediate and disastrous destruction can result unless the current is limited. The ordinary catalogue or handbook description gives no clue as to how a particular type of rectifier behaves in this region, **and thus applied voltages should never be more than maximum ratings**. Occasionally typical curves are shown that illustrate how a manufacturer expects his product to enter the region of rapid increase of reverse current, but it is impossible for a maker to check each inexpensive rectifier for compliance. In cases where only a single rectifier has reverse voltage applied to it, this region is relatively unimportant, because it always lies at a higher voltage than the rating. The region is important when two or more rectifiers are connected in series to obtain a higher total voltage rating.

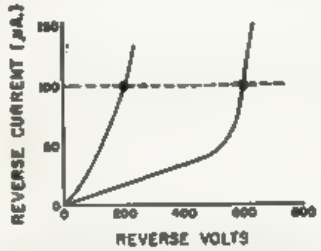


Fig. 4.—Division of 800 reverse volts across two series rectifiers having the characteristics shown would result in one rectifier having only 200 volts and the other 600 volts.

When two semiconductor rectifiers are connected in series, how does the voltage divide? Let us imagine two rectifiers in series having to divide 800 reverse volts, and having the reverse characteristics shown in Fig. 4. As this is a series circuit, the reverse current must be the same in the two rectifiers, and the total of the voltages developed must add up to 800 volts. The situation here is intentionally bad, with one rectifier having a "sharp" break and the other a "soft" break in the reverse current-voltage curve. Here we see that at 100 microamperes the rectifier with the soft break is subjected to 200 volts and the sharp-break rectifier must withstand 600 volts. This means that the rectifier with 600 volts across it will have to dissipate three times the power of the rectifier that has the higher leakage current in normal service. It will, of course, become hotter, and its own leakage current will increase until a somewhat more equal distribution of voltage occurs. The danger in this compensating process is that destruction may occur before a satisfactory equalisation is reached. For this reason manufacturers, when assembling series strings, frequently make certain that the diodes used in each string have the same type of break and, if a soft break, are pretty well matched.

General Electric practice[2] is that strings of germanium rectifiers such as the 1N91 should be factory-matched, while medium- and high-current silicon units (like the 1N1301) are well enough matched if they have the same type number and peak inverse voltage rating. With low-current types—for instance, the 1N253, 1N440, 1N536, 1N1115, and 1N1487—having a sharp knee or break, no particular matching of reverse characteristic or selection of peak inverse voltage rating is required.

When the diodes have a sharp break, the total current is usually low enough to prevent developing enough power to cause destruction if at least a moderate amount of safety factor has been allowed in choosing rectifier voltage ratings.

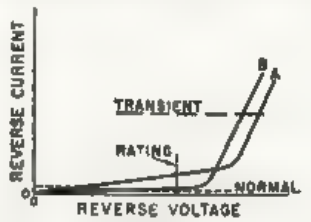


Fig. 5.—A pair of rectifiers (A and B above) may make resistive equalisation of voltage difficult. At rated voltage, A here has the lower resistance, but B has a lower resistance at the transient condition.

Longer strings of the same type rectifier are inherently safer. Incidentally, it is uncommon to shunt rectifiers with resistors to equalise voltages, though it could be done. One reason not to would be because the voltage division during most of the reverse cycle would differ from the division at transient peak voltages. An example of the difference is shown in Fig. 5, where rectifier B (uncompensated) would have greatest impressed voltage normally, but not during transients.[3]

Transients frequently cause different voltages to appear across rectifiers in a series string. Each diode appears as a small capacitor and, of course, each lead of that capacitor has a certain capacitance to ground as in Fig. 6. This string acts as a voltage divider. If we assume that a pulse with a very steep wave front is coming from the left and has reverse polarity, the biggest portion of that pulse is going to appear across the left-hand rectifier. A more equal division of voltages can be achieved by shunting the rectifiers with equal capacitors of 1,000 micromicrofarads or more. In long strings it is sufficient to shunt possibly as many as three or four rectifiers at a time (the same number at a time, of course) with satisfactory results. The reason for the unequal distribution of voltage without the compensating capacitors is that the stray ground capacitances (in the example shown) cause current to be bypassed to ground as the transient moves from the left to the right, and little of the transient appears across the right-hand rectifiers.

Fig. 6.—Transients coming from the a.c. source affect the left-hand rectifiers most because of the by-passing effect of the stray capacitances. Capacitance compensation can help (see text).

(Continued on Page 10)

2—General Electric Semiconductor Products Department, "Series Operation of Silicon and Germanium Rectifiers." Publication ECG-400 3/59.

3—This discussion assumes that transients are infrequent but cannot be avoided.

SEMICONDUCTOR RECTIFIERS

(Continued from Page 9)

Transients should be expected to appear even when the power source feeding the rectifier is stable. Switching on the power at a time when the input a.c. is at the peak of the cycle is one cause; the presence of a transformer with inductance in the switched line is another. One source of transients that is not so obvious is in the rectifier itself. The current carriers in the rectifier are usually in motion across the P-N junction at the time of polarity reversal of the rectifying circuit. These carriers are so close to the junction that they will often recross it and give the effect of reverse current, and it does take an appreciable amount of time for them to be cleaned out. This process makes the rectifier look as if it is shorted for this period and, particularly in the case of bridge rectifiers, when the "shorted" period is over for one rectifier, another rectifier or rectifier string suddenly sees whatever voltage the a.c. source has reached during this period.

RECTIFIERS IN PARALLEL

In the forward direction, a semiconductor rectifier has many of the characteristics of a voltage regulator in that once the threshold voltage (a fraction of a volt) has been reached, the rectifier will conduct very greatly increased current before the voltage rises more than a few additional tenths of a volt. Rectifiers of the same type do not all have exactly the same threshold voltage. If two such rectifiers are paralleled, the difference in the voltage drops will mean that the rectifier having the lower voltage drop will carry the greater current. Equalising resistors should be used in series with each rectifier, as in Fig. 7, making the resistance value such that there is a drop of perhaps one volt at the rated current. This makes the difference in voltage drops of the rectifiers have little effect on the even distribution of current.

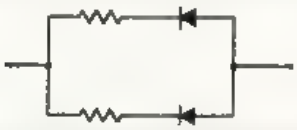


Fig. 7.—Small equalising resistors help divide forward current between paralleled rectifiers (see text).

INSULATION AND HEAT SINKS

Most rectifiers in the power range have a case that is connected to one of the leads, though there are a number of all-glass types. The "hot" case must be insulated by air spacing or other means from the rest of the circuitry to prevent accidental shorts.

This insulation causes some problems when the rectifier is dissipating an appreciable amount of power, for some means must be provided for removing the heat from the rectifier. Most rectifiers that need this treatment to meet their advertised ratings are equipped with a threaded stud mount. There are available mica washers that may be used to provide electrical insulation while permitting considerable heat transfer to the chassis or other metal body the part is mounted on. There are also power rectifiers available with insulated studs that are useful for mounting directly against the chassis. Here, as with the mica washers, the stray capacitance to ground is increased.

Another way of providing cooling for the rectifier is to mount the stud into a metal plate having an area of several square inches, and permit free air or blown air to cool the metal plate. It is necessary to insulate the plate if the stud is in electrical contact with the rectifier.

ACKNOWLEDGMENT

The writings of many other authors, notably that of F. W. Gutzwiller, were freely consulted in the preparation of this article. Much was recast into the above wording, and errors of interpretation, if any, are this author's. ●

☆

RADIO DETAILS OF RUSSIA'S SPACESHIP

The first flight of man into space in the history of civilisation was carried out in the Soviet Union on April 12, 1961. The "Vostok" space-ship, with Comrade Y. A. Gagarin, pilot-astronaut of the U.S.S.R. on board, was put into orbit as an earth satellite.

The orbital elements of the spaceship are measured and the operation of the ship-borne systems is monitored by radio instruments and radio telemetry facilities.

The elements of the ship's movement are measured and telemetered records are received by ground tracking stations inside the Soviet Union. Incoming data is automatically transmitted to computer centres where it is reduced by electronic computers. As a result, current information about the basic elements of the flight path is obtained and the further movement of the ship is predicted throughout the flight.

The ship also carries a "Signal" radio system operating on 19.995 Mc. This system is employed as a radio beacon and as a channel for transmitting part of the telemetric information.

The t.v. system televises the space pilot to the earth, thus providing a visual check on his condition. One of the t.v. cameras shows him full face and the other in profile.

The two-way radio link between the pilot and the ground is provided by a radio telephone system operating in the h.f. range (on 9.019 and 20.006 Mc.) and in the v.h.f. range (on 143.625 Mc.).

The v.h.f. channel is used for communication with ground stations within 1,500 to 2,000 kilometres of the spaceship. As past experience has shown, the h.f. channel can provide a reliable link with ground stations inside the Soviet Union over the greater part of the orbit.

The radio telephone system incorporates a tape recorder which records the pilot's speech and then plays it back and transmits to the ground when the spaceship flies over the ground receiving stations.

Provision is also made for radio telegraph transmission by the space pilot.

—Reprinted from "Moscow News," April 29, 1961.

SUBSCRIPTIONS

● Please pay your Subscriptions PROMPTLY when due. Failure to do so may result in the loss of valuable issues of "Amateur Radio." High costs of production make it necessary to limit the number of extra copies printed each month.

A Junior Short Wave Receiver—19-49 Metres

HARRY MAJOR, WIA-L3102*

Listening in on the short waves can be quite an interesting hobby, even with a simple type of receiver.

While short wave superhetrodyne receivers are ideal, they may be beyond the ability of the younger members interested in short wave reception.

The receiver detailed here was rebuilt into an old broadcast receiver. The tuning coil was removed and replaced by the special short wave coil which, with the 400 pF. tuning condenser, will cover from 19 to 49 metres. The smaller condenser is actually used for tuning and the larger one only for band setting, as shown on the home-made dial.

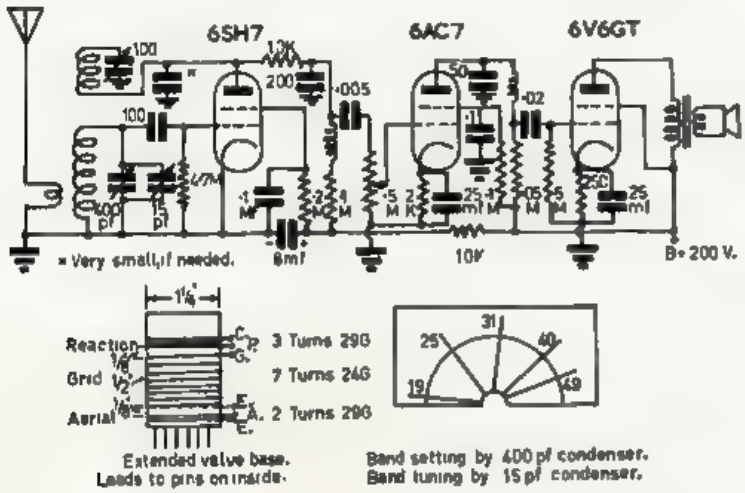
The 6SH7 and 6AC7 valves can be cheaply obtained from disposals. The circuit is very similar to others which have been published, but with a number of minor alterations found to make it more effective and easier to tune and control oscillation.

The two stages of audio are an advantage, enabling the weaker stations to be brought in at good volume and avoids the use of headphones.

The small condenser marked by the asterick may not be necessary unless oscillation is excessive. I found it is not necessary on the set constructed.

The use of a short aerial, 20 to 30 feet long, is sufficient to enable quite a number of the larger overseas stations to be brought in at good volume.

The broadcast dial was removed and a longer single-ended pointer fitted on to the end of the spindle. The dial was made from white card and after the band setting positions were marked, it was covered with a piece of cellophane. ●



* 30 Seaton Street, Glen Iris, S.E.6.

NEGATIVE CYCLE LOADING

In the article "A.M. Without Splatter" ("A.R." Feb. '61) reference was made to Negative Cycle Loading. With further reference to this form of modulator output limiting appearing in "A.R." Jan. '62, some additional facts may be of interest.

Negative cycle loading will reduce splatter due to overmodulation since—

1. It minimises the tendency toward negative peak clipping by the final, and
2. It presents a load to the modulator even if the final plate volts do go negative, preventing the high voltage transients which would otherwise be generated by the unloaded modulator.

Against these must be weighed the facts that—

1. N.c.l. wastes modulator power, since portion of the modulator output is dissipated as soon as the final plate volts fall below the quiescent carrier value, and
2. N.c.l. introduces distortion which broadens the signal. If n.c.l. is applied to a transmitter which was previously never modulated more than 100%, then for the same modulator output the resultant signal will have less modulation (approx. 70%), with a frequency spectrum half as wide again as that previously occupied. This broadening of the signal does not disrupt the band as does the splatter of overmodulation, but is nevertheless undesirable.

For this reason, a high level low-pass filter should always be used between the loaded modulator output and the final. Such a filter is advantageous even if no form of high level limiting is used, since distortion figures for Class B modulators as used by most Amateurs run around the 5% mark, and spurious sidebands will thereby be generated. The combination of n.c.l. plus filter plus plenty of audio plus a final with high modulation capability will result in a well-modulated splatter-free signal.

Note that there is absolutely no justification for the choice of the diode series resistor as half the d.c. impedance of the final plate circuit, articles by K6BJ not withstanding. The value will depend on the excess audio available, and the characteristics of the modulator tubes. By far the best method of determining the value is by trial and error, using a c.r.o. (preferably with trapezoid pattern) and choosing the resistor which will just prevent final cut-off when shouting into the microphone at typical DX level. Remember, however, that n.c.l. will not increase the audio output of the modulator, which must always be run within its capabilities if intelligibility is not to suffer.

—Bob Roper, VK5PU

[See next month's "A.R." for full details of the original article by K6BJ, reproduced by courtesy of Eimac Tubes, U.S.A.—Ed.]

HINTS AND KINKS

FREQUENCY JUMPING V.F.O's.

Those who have been troubled by slight frequency jumping of their Geloso 4/104 exciter units may locate the source in one or more of the following:—

1. The spacers in the central section of the band switch, which are held in compression between two of the switch wafers, appear to depend for their earth connection on a chance contact with the rods which they encircle. Measurement between the spacers and the exciter chassis may disclose a considerable resistance, which may vary with pressure. It is unfortunate that these spacers are made of light metal which will not take ordinary solder, but small copper clamps can be made to fit around the spacers, near the centres of their length, and copper braids run to earth from these clamps (at the earth tie points for condensers C7, C8 and C9).

The flat switch operating spindle may also show a low but variable resistance to earth, and this may receive treatment similar to that given the spacers. The spindle will take solder.

If the braids are made just sufficiently long, and if they are staggered slightly along the length of the switch, they will not interfere with each other, or with the operation of the switch.

2. Measurement between the dial cord spindle and chassis may reveal a considerable and variable resistance. The cord end of this spindle is fairly close to v.f.o. tuned circuit components. A cure can be effected by treatment with an oily type of contact lubricant (Electrolube).

3. The Litz wound coils L1 and L2 should be removed from the chassis, and the Litz terminations closely examined, with the aid of a magnifying glass.

—J. Bonnington, VK3AKB.

VK2 TO ZL3 ON 144 MEGACYCLES

The v.h.f. bands have been agog over the news of the 144 Mc. contact between VK2ASZ and ZL3AQ on 30th December, 1961.

Bob VK2ASZ was portable at Mt. Allister at the time to take part in the VK2 V.h.f. Midsummer Field Day. He decided to have one last tune across the band before lunch and heard ZL3AQ calling CQ VK. Contact was established at 1310 hours and continued until 1325 hours. ZL3AQ stayed at 5 and 9 over this period and Bob's signal report was 5 and 6 with QSB.

Verne ZL3AQ was using 30 watts to a 5 over 5 beam and his location is at Ashburton on the east coast of the south island.

VK2ASZ was using 12 watts to 3/12 and antenna was 3 over 3.

Unfortunately, first check of the distance at 1355 miles would make it just six miles short of the existing VK record, but final checks may tell a different story.

VK2ASZ was located at Mt. Allister when he made contact with ZL3AQ on 144 Mc.

AMATEUR RADIO A THRILL FOR THE LADS

Difficulties associated with getting home to outlying areas and consequent restriction of time to the lunch hour, a quiet period in Amateur transmitting and receiving, do not deter a keen little band of radio enthusiasts at St. Edward's Christian Brothers' College, Gosford, in their enthusiasm for a fascinating hobby.

Perhaps their interest can be better understood when it is realised that the boys have the support of one of their masters, Brother D. W. Kinsella, VK-2AXK. Although he specialises in the teaching of French and science, Brother Kinsella has found from long experience with Amateur Radio how valuable is the knowledge of electronics and other principles of physics acquired by young enthusiasts in this field.

Brother Kinsella with two of the lads from the College.

During two years of teaching at the Christian Brothers' Technical High School, Newtown, Brother Kinsella proved the worth of getting boys interested in Amateur Radio. The pupils at the technical school built a "junk rig" from disposal parts. At the time, the station (VK2AXK) was believed to be the only one operating from a classroom The venture was widely reported and specially featured in newspapers and magazines.

The boys at St. Edward's, with their limited time, cannot as yet hope to equal such a reputation but as is the case with Brother Kinsella, it is quality rather than quantity that counts all the time.

The boys operate under the call sign of VK2ATQ. They experienced the pleasure recently of being the first station to make contact with another school, the Booragul Boys' High School, Newcastle, commencing a new station VK2ATZ

St. Edward's also has made contact with girl radio enthusiasts sending from a Victorian school under the call sign of VK3YL.

Biggest thrill for the lads, perhaps, came when they managed to make contact with a Ham in Ecuador, South America, no mean feat with their first transmitter of 40 watts.

NEW S.S.B. TRANSMITTER

Startling progress has been made with the introduction of a 150 watt s.s.b. transmitter for club use. This was made possible through the generosity of several Sydney Amateurs who spent a great deal of time making up a 2EWL phasing rig and linear of four parallel 807s

A complete control unit came with the gear, allowing vox, press-to-talk, or manual operation The receiver comprises crystal converters to 3 Mc. Command, then low frequency i.f. with double half lattice filter.

The complete station is packed into a small cupboard in the classroom, leaving only the antenna coupler and monimatch visible when the cupboard is closed.

Signals leave the district via a G5RV flat top on 40, or a two element beam on 20 mx. There are at least six other Amateur shacks within a mile of the College, but rarely any QRM as they only operate at 12.30 and 3.30 on weekdays.

The station has interesting educational possibilities in the way of geography and languages. Several times they have had distant Hams give talks to a class and they are hoping to arrange some French conversation with FK8 one day.

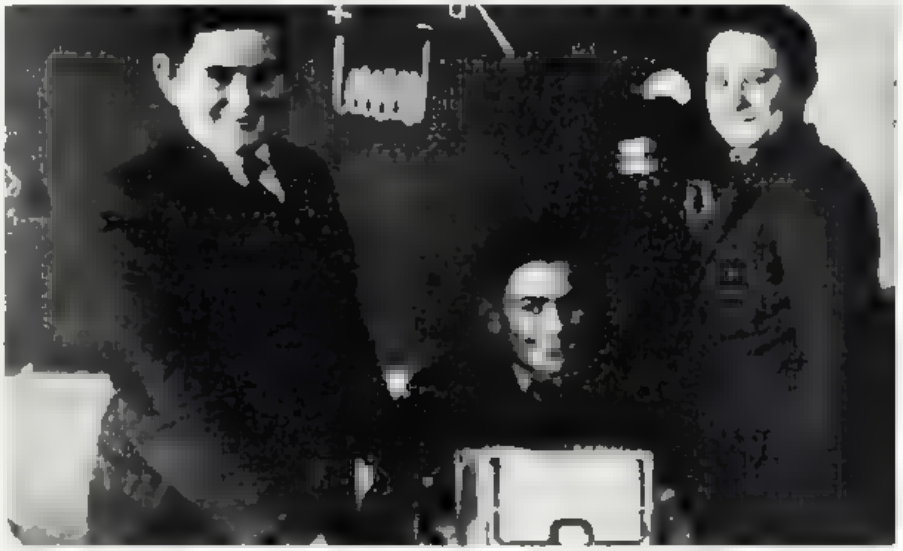
The boys already have a great number of QSL cards displayed on the door of the classroom cupboard which houses the station.

And while teachers exist, such as Brother Kinsella and others of his calling, who do not confine themselves to the mere imparting of dry book learning, then youngsters of ability will be spurred on to worthwhile achievement.

ASSISTANCE REQUIRED

Federal Executive is at present planning to put the Federal station, VK3WIA, on the air from its new location in Carlton.

Anyone interested in assisting with this interesting project is requested to get in touch with the Federal Treasurer, Bob Boase, VK3NI, phone 34-9491 any hour. The station is operated under special licence and uses high power.



Three of the boys from the College, left to right: Frank Booth, Dennis Halpin, and David Hyde.

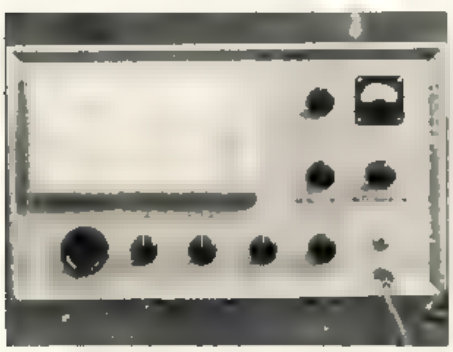
Trade Review

"IAN McMILLAN TX150/75" TRANSMITTER

This Australian produced transmitter is a logically designed and constructed kit. Provision has been made for the constructor to provide his own external power supply, if necessary using suitable components from his own "junk box".

The TX150/75 is a very solidly constructed unit of attractive functional and electronic capabilities. It is built around a Geloso v.f.o. and there is available a very simple yet effective modulator unit, so providing a complete a.m./c.w. transmitter.

A heavy pre-punched passivated cadmium plated chassis is provided in the kit, and the pre-printed front panel matches the chassis, being attached by the components, so eliminating the normal fixing screws. Wiring is simple, yet the adequate grid drive available is proof of effectiveness of the layout.



An unusual treatment is given to the outer cabinet which provides a durable yet attractive finish.

The cost may seem high, but if a careful analysis is made, it will be found that this is not an expensive kit. The builder will be able to obtain a good re-sale value in later years (and this does offset the low value normally placed upon home-made gear), which reduces the original kit cost.

Regretably no opportunity was available for "on the air" tests, but it can be claimed that from such a simple, reliable piece of equipment, well constructed and designed, an effective signal will be radiated.

The manufacturers are to be congratulated on their first kit set which has obviously been designed by a practical Amateur well versed in construction practice. It is a unit which can be recommended with confidence, and is a kit which will more than repay the small time required for construction.

It is an ideal unit for any Amateur to acquire and provides an easier way for a busy Amateur to procure an effective station which covers all Amateur bands. Wiring is reduced to a minimum as the v.f.o., being supplied complete, is merely placed in position, and wired to the final.

Our sample from A. E. Monk Pty. Ltd., Verity Street, Richmond, E.1, Vic.

NEW TECHNIQUE IN GAS CHROMATOGRAPHY ANALYSIS

A new device known as the "C-Scope" has been developed by the Scottish engineering firm, Bruce Peebles & Co. Ltd., of Edinburgh.

The "C-Scope" introduces a new concept to gas chromatography techniques by providing immediate display facilities on a long persistence cathode-ray tube This method reduces the time required for the analysis of a sample from several hours to five minutes, and has the further advantage that analyses can be repeated.

The instrument is particularly suitable for monitoring applications, when it is necessary to sample important stages of a process at pre-determined time intervals, so that trends can be observed and remedial action taken should a departure from the prescribed standards become apparent.

The timing units can be pre-set to a timing programme, so that the display can be synchronised with the sampling period: alternatively a pre-determined section of the complete analysis can be selected for viewing. A control unit provides the pulses necessary to initiate the sampling process.

For constant input a high order of accuracy is obtained in repeat analyses, thus the instrument can be used both for quantitative and qualitative analysis.

Chromatographic equipment to supply signals to the "C-Scope" and suitable for the analysis of a wide range of compounds can be supplied. Compounds include petroleum fractions, industrial solvents, hydro-carbon gases, refrigerant fluids and gases, anaesthetics, essential oils, plasticisers and greases.

Highly-sensitive detectors are available requiring samples of 10-100 micrograms. Impurities down to 10 ppm. or less may be detected in favourable cases.

Further information and photographs (if available) may be obtained from Mr. H. A. Tyrer, Engineering Products Division, Amalgamated Wireless (Australasia) Limited, G.P.O., Box 2516, Sydney, N.S.W.

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ERRATA

Unfortunately details of RFC3 and RFC4, and L1 were omitted from p. 19 in the linear amplifier description, Dec. "A.R."

Also 630 pF. variable near output socket should be 1200 pF. The second meter with switching has been omitted from circuit diagram, in error.

RFC3: 23 double turns of No. 14 s.w.g. enamel on 4½" of loopstick.

RFC4: 110 turns of No. 24 s.w.g. enamel, space-wound on most of 5" x 1½" former.

L1: 2½ turns of No. 14 s.w.g. 5/16" diam., resistor in centre.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

D X

VP4, OA4, BV, ZM7, 7G1, FP, AC5, MP4, ZC6, TY2

Sub Editor: ALAN SHAWSMITH, VK4SS, (Phone 4-6636—7 a.m.-4 p.m.)
35 Whynot St., West End, Brisbane, Qld.

ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

With the Festive Season over I guess by now most of us will be back in the groove, or the rat-race, or whatever it is each and everyone of us has to return to. I suppose some of the keener types never left their receivers, but I, with many others, lazed in the lap of our heritage, namely the sun, sand and surf. Consequently, I have no idea how the bands performed during this month of December, except perhaps 7 Mc. which was fair enough during the latter night hours, when some good DX appeared.

There is a fair stack of mail on hand which is an encouraging start for 1962. So here goes.

NOTES AND NEWS

TA2BK and TL8AC have been heard here on more than one occasion, but the question seems to be "are they authentic"?

TT8AG (Tchad) can be easily recognised. His sig is strong and his note is poor (T8). But I think he is "fair dinkum"

Doug W6BVN has pulled out of the Danny Weil adventure in the Yasmins. Danny should be on the water headed West by now, but so far no confirmation of this.

Have you worked Tom VR8TC? No! Then don't worry, your chances are about to be brightened. Tom is about to come on with a much higher-powered rig. He averages about 100 QSOs a month, but I know the VK boys would like him to average more. I often hear him being called but his sigs are seldom audible here. (News by K6CQM).

Tuva: Moscow, October 12, 1961. The Tuva Oblast region) on Mongolia's Northern frontier in Siberia has been elevated to an autonomous Soviet Republic, Tass reports. It is said the change was made by decree on the 17th anniversary of Tuva's voluntary entry into the U.S.S.R. With this comment from Tass, we will lay out that Tuva will join UH8, UI8, UM8 and others as a new A.R.R.L. D.X.C.C. qualifier. Before all this happened, it was just an insignificant s.s.b. contact from Zone 23. (Courtesy K6CQM).

AC3 and AC5: VU2NR has returned from New Delhi where he was successful in obtaining the calls AC3NRM and AC5NRM. He plans to be on during the last part of January or the first part of February. All cards via W7FHO. (Courtesy K6CQM.)

Kamaran Islands: A.R.R.L. has announced the addition of Kamaran Islands to the A.R.R.L. Countries List. D.X.C.C. credit will be given after February 1, 1962.

UI8AV, UI8LB and other rare central Asian prefixes are keen to work VK. They can be heard from 1600 hours GMT onwards on 7 Mc.

Are you still looking for ZL8AI to complete your W.A.Z.L. award? Try 14 Mc. a.m. Sometimes on around 2000 GMT.

Frank VK2QL has been elected first VK DX member of the United States QRP Club. The main requirement for acceptance to this Club is of course that the rig must be designed for 100 watts or less. Cost is a dollar per year and more info can be had by writing to Frank or to W6CIS. (There's no need to mention the amount of DX that our ex-sub-editor has worked with his 40 watts. Nice work OM.

The c.w. section of the 7 Mc. band now has very little Commercial QRM in the early mornings. Radio Pakistan is one notable absentee. Is it only a lull or are they gone for good? I guess the latter is too much to expect.

TU2AL operates around 1040 kc. at 2000z and he is looking for VK contacts.

XT2A (Republique de Haute Volta) is now QRT but XT2Z may be on around Easter next on s.s.b.

The American Military is leaving Saudi-Arabia, but HZ1AB is expected to continue. As yet anyway the gear is not being packed up.

Those who worked Gus W4BPD on his last trip around East Africa and Persian Gulf will be pleased to know that he has sent off all the VK QSLs this week.

Jeff VK5NQ wants to know if anyone has been able to prise a QSL from F2CB/FC. He has sent three cards to Corsica with no results. (My position is the same Jeff. I have sent him several confirmations for several QSOs but no good. FBIL will help if he can. Send him a personal word.)

ACTIVITIES

Laurie VK1AMB comes up with some good ones. He wkd. on 14 Mc. c.w., FO8AQ, VS9MB (Maldive Is.), 9M2FS, UA1KAE (Mirny), OA3C, VS4RM, 4S7EC. 14 Mc. c.w. hrd.: 5V-8WI (Rhodes Is.), KR6KS, TI2WA, VK5XK/9, HC2IE, ZC4DK, VS9AGV, KC4USV, VU2KU, 5U1AM, VQ9HZ, HZ1AB, DU1CV, VR4CV, 5N2LKZ, CR7IZ, HP1IE, YJ1MA, 5V0WC. QSLs rcd.. HC8IE, VR3V, VK9BH, TI2CAH, KP4AN8, 5A4TC, ZE8JJ, OA4HP.

Ken VK3TL is back on the air after changing QTH to Templestowe. He has wkd. on 14 Mc c w AP5CP, DU8TY, EA3GM, KR8AP, KX9CO, LU3HL, UA1KAE (Antarctica), UA-9JHU VR4CV, XE1AY 14 Mc a.m wkd. FK8AU, ZE4US. ZL3AI Wkd. on 14 Mc s s b. DL8IU, G3AAM, HC1FG HC1FO, KB6BR (Canton KC4AAE, KC4USE, KC4USS KC-4UST, PA0FM, TI2HP, XZ2NS and the following marine mobile K1LHJ, K6QOF, KH6EJL, W6PCE W6ZBY QSLs rcd. were CN2BK, DM2AMG, DU7SV, EP2AP, FK8AU FK8AW, G3AGG G3JAF GI3OQR, HK3TH, KZ5MQ, LA8PF, OA4KU UA1HA, UA1KAE, UA2BD, UA4PA, UA6LD, UA9BZ, UA0KDA, UA0KKS, UC2KAR, UD6AZ, UI8KAA, UI8KAD, UQ2AE/MM, VE0MC, VK9PJ, VP9EP, VP9PV, VS1DN, VU2AK, VU2RG, YO6XI, 4X4NJ, 5A5TF, 9K2AY, 9M2DW, 9M2GA.

Geoff VK3ZMS has been concentrating on his code practice but found time to note the following: 7 Mc. c.w.: KG6ALK. 14 Mc. c.w JA2DM, KR6AD. 14 Mc. a.m.: DJ0CE, DU1AN, DU1MR, FK8AU, HC2RT, HC1FU, JA6YG, JA-6BI/P, OA4K, VR4CB. 21 Mc. a.m. hrd.: DU-1MR, JA2AZW. 14 Mc. s.s.b.: GI6IM, KA8AS, KC4USE, KC4USG, KC4USH, KR6KS, W3HNW/MM, 5A3TY.

George VK5RX QSOd the following: 14 Mc. c.w.: EP2AF (1225), HZ1AB (1603), UT5CC (1230), CR7IZ (1742), CX2CO (0624), VS9AAC (1538), YJ1MA (1902), VS4RM (1360), AP5CP (1124), VK3XK/9 Norfolk Is. (0018), LZ1KNB (1242), SP5AAT, SP5FZ (1410), UW3UF, UW-9AG (1324) Times all GMT. George rcd. the following awards: C.A.A., A.J.D., W.B.C., D.U.F.3, W.F.K.A. W.N.A.C.A, B.E.R.T.A and W.A.V.Q. (Africa). Congrats, George, on W.B.C. I know it takes a lot of getting.

Ray VK3RK has taken up Pennant Bowls and let DXing slide somewhat. This month his activities were confined to J, W, VS6, KA, etc., all on 14 Mc. (Don't let that gear get too rusty, Ray)

Tubby VK5NO and Geoff VK3NQ come to hand with this good list: 3.5 Mc c w. wkd., KR6LJ 1430, KW6DG 1110, KX6BU 1124, VE-3AGX 1130 VK3XK/9 1127, ZK1AR 0958. 14 Mc c.w. wkd.: CE4AD, 1118, HM4AQ 1013, TT8AG 1552, 9G1DE 2250, CR7IZ 1502, HV1CN 0726, ZB1FA 0946, 9Q5AAA 2237, CX2CO 0615, VQ9AJ 1300, ZK2AD 1952, 3M5ARQ/9Q5 1305, FR7ZD 1313, UG6KAA 1400, ZS7M 1410, HZ1AB 1513, YJ1MA 1002, 5A3CAD 1531, KC4USS 1233, VS9AGV 1417, 5R8AD 1908, 5R8CQ 1517, KC8BD 0400 (East Carolines), TG1A 1617. 21 Mc. c.w. wkd.: EP2BB 0000, UJ8KAA 0945, ZB1HC 0838, FR7ZD 0741, UF6FB 0122, 9Q5AAA 0757, HC-1AG1 0220, UL7FA 0512, HZ1AB 1035, VQ9BC 0745, ON5AG 1200, VS4RS 1120. Times are GMT

John VK5ZC, now a member of the Elizabeth Radio Club, sends in the following, all wkd. on 7 Mc.: ZE7JV, HS2M, 5H3HZ, 5N2LKZ, 9Q5AAA. KC6BO VU2GG MP4BCP, FB8XX, FB8ZZ YV4AE. ZS6KO VS9AAC BV2HPT, VS1KQ, KV4CI/MM, VS6EM, 9M2ER, VR3DK, ZS3KJ (Congrats. John, on your coming marriage. If your wife takes as kindly to Amateur Radio, as mine does, then in this aspect your days will be happy—Good luck.)

Hal VK4DO, one of the column's regulars for a long time, QSOd the following: 14 Mc. c.w hrd.: W, KA, JA, AP5CP, BV1US, DJ8IM, DJ5JI, DL1DX, DL1IN, DL8DA, DU1FM, FB-8YY, FB8ZZ, FK8AH, G6BQ, GB2SM, HB9X, HC2FG, HS1X, HZ1AB, KX6AM, KX6CG, KZ-5LC, LZ2KST, OE1IE, OK1ZL, OK2LE, OZ7EV, SM5BEU, SP8AAT, UB5KBV, UB5XK, UB-5XKA UB5XIE UI8KAA, UM8KAA, UD6KAK, UL7KAK UL7KAA XZ2TH 4S7NE, 4X4FA, 4X4IV 14 Mc c w wkd JA, KA, KC6BD, KP4CC, KW6DG, KR6NG. LU5AQ, 5M8BIC TI2WA UA0TN, UA1DK UA1KBR, UA3TY, UO5GN, VU2TH, VU2NR, VS5XK/VK8, VS1FZ, YJ1MA, VK0TC ZL2VB (Chatham Is), 9M2UF, LA7RF/M. 14 Mc. phone hrd.: VS1FZ, VR4CB. 21 Mc. c.w. hrd.: DL1DC, DL3ZL, DL1JV, DJ-5WV EA4CR, H51R, II5G, KG6ALB, OE1FF, OE3WB, VQ4FT, VS4RM UA6LI, UA6MK, UA8DN, ZC4SG, ZK1AR 21 Mc c w wkd.: JA, KA, W, DL1MF, KR6LJ, KW6DG, VS1FZ, 4S7NE, ZC4TX. 21 Mc. phone wkd.: VS4RS.

Yours truly, VK4SS, is still on 40 mx, trying to clinch those last few for 7 Mc. D.X.C.C. Those wkd. were DM1RN DJ1KP DJ2VK, DJ3KR, DJ4OP, DJ4LO, DJ5IN, DL8KP, DU-6IV, FT7D, G2TH, G3PDL, G5BZ, G3AAE, G5DQ, HA5KFB, HM1AX, II9IB, II3N, II2N, KC8BD, KP4AOO, KX6AJ, KX6BU, KW6DG, HB9AAP, HB9KO, HB9AAN, HB9UK, HB9ZY, HB9KO, HB9AAU, OK1FV, OK1PG, OK1KUR, OK3KGZ, OK3OI, KA2RP, LZ2KBA, OH4PX, UB5ZE, SP2CO, SP5SM, SP9HT, SP8HU, SP-8HX, SP9KJ, OE5RZ, YU1EFG, YU2ZP, YV-5AGD, YO6RL, YO2CY, YO3RK, YO9CN, YO-1RZ, YO1DZ, YO2BI, YO6KBA, UA1NZ, UA-3KND, UA4KED, UA4YY, UA4YL, UA6LI, UA-6JL, UA9WF, UA9YE, UA9FJ, UI8LB, UI8AV, UA9EQ, UA9JH, UO5AA, UL7FA, UA0AG, UM-8KAA, UA0BN, UF9FN, ZE3JO, ZC4SG, ZE7JV, ZS6KO, VS6EC, 5H3HD, 4X4DH, 4X4WF, and 4X4JU

Eric BERS195 seems to have had a keen ear to the rx this past month. He logged on 7 Mc. c.w.: DJ7KH, DJ2AA, F8VQ, HV1CN, OK1KUR, OK1PG, OK2KOO, SP5HU, UA1KAE, UA4KED, UA6FD, UA9AA, UA9DA, UB5JJ, UJ8AL, UO-5AA, UM8KAA, VE7KX, YO6KBA, YU4FS, JA3DTM/MM, JA6AHT/MM, LA5HE/M, ZS-6KI, etc. 14 Mc. c.w. hrd.: CT3AB, BV1USO, EP2BK, CR7IZ, ET3US HM4AQ, JZ0BM, KC-4USS, KC6BD, KR6AD, KV4CI, ON4JH, MP-4TAC, VK5XK/9, VK0JB, VS9AAI, VS4RM, VU2MD. 14 Mc. phone: DU1AN, JA6YG, MP-4TAC, VR2BC, VU1AN, XZ2SY, ZC4TX, 4S7NE, 9M2FF, ZK1AR, 8W8DD 2100z). QSLs rcd KM6BV, KV4BQ, KX6CG, PY2CK, UA2BD, UQ2AX, VK6HA, VK6NK, VK5XK/9, VR4CV, 3M5BUG/9Q5, KC4USN, LU1ZL, VK0JM.

Don L3023 says he is QRL with other things just now but nevertheless sent in quite a good bag. He hrd. on 14 Mc. c.w.: AP5CP, HC1FG, UO5KAA, KC6AIG, 8M7CN, ZK1AB, VQ4RF, UC2AD, HA5GY, HC1JU, UG6KAA, 5A3TY, UB5NP, ZC4BC, LZ2KKZ, 5U7AC, VS4NM, GW4BL, VS9AAC, CT3AB, KP4AN, 9G1DT, KH6EDY, FK8AE, 4X4DK, 8V0WC, UL7NB 14 Mc s s b hrd KB6BR. XE1SV, UA0BP, VU2NR. KC4USN UA3CR UB5UW KH6GU/KH6, KX6BQ KH6CLL. UA3FG PJ2AF, UW3UF, KC6BC YV5AFF PY4AS H81K, and others. 14 Mc a m VR4CB VK9GK, HK3VQ.

Frank VK3QL recorded these QSOs. On 3.5 Mc. c.w. he wkd. KH6IJ, KH6CVD KW6DG, KX6DU KR6LJ, KC6BD, JA1HTY JA1LK, UA6KGA and Ws 1-9 Hrd UB5FY SP4KDE. 7 Mc. c.w. wkd. on Lp. were K6DGT, W2KQT and KX6BU on the s.r. of course. 14 Mc. c.w. wkd 8V0WI HV1CN KZ5TD. 6O1MT 1.X2XG, 5N2LKZ. VQ9IB 9Q5AAA 5R8CE. 5R8AD, and hrd were ZS3EW TT8AA TL8AC and others. QSLs rcd were 5U7AC, HP1IE, VS4RM, 5A3TQ, KH6EDY HM4AQ Frank says QRN has been troublesome on 3.5, 7 and 14 Mc. bands during most of Dec Same here OM. It has been really bad with daily thunderstorms.)

Jeff VK5NQ, one of VK's most active DXers, comes up with another comprehensive list. 3.5 Mc. c.w.: W8JIN 1934z, 14 Mc. c.w CX-2BT 0500z. EA8AP 1725z EP2BN 1128z ET3US 1319z, FA3OA 1847z, FA8UN 1400z, F2CB/FC 1350z, F9SC/FC 1507z, GB2MT 1546z. HZ1AB 1436z, IT1AGA 1401z, KG6IJ 0830z, KV4CI 1244z, LU7GT 0817z, MP4BBE 1428z, MP4BCP 1713z, MP4BDP 1417z, MP4MAH 1350z, SV0WG 1500z, TN8AF 1530z, UA2AB 1431z, UF6ACI 1217z, UG6KAA 1132z, VP5MJ 1310z, VQ5IB 1535z, VQ9APB 1240z, VQ9BC 1625z, VS6ADM 1410z, VS6MB 1608z, YK1AK 1508z, ZB1FT 1245z, ZB-1AE 1700z, ZE1AK 1418z, ZE1AV 1450z, ZE3JO 1583z, ZE6JY 1707z, 3V8CA 1655z, 4W1AA 1230z, 4A3BC 1614z, 5A3CAD 1630z, 5A3TY 1447z, 5H3HZ 1508z, 5N2RDG 1800z, 5N2MW 1538z, 14 Mc. phone worked. MP4TAC 1532z, MP4TAO 1410z, MP4BBW 1331z, 5U1AS 1340z, VE2BQL/SU 1338z, ZS7L 1500z, 8K1AM 1332z. 21 Mc. c.w. wkd.: YA1BW 0950z, phone VS4RS 0836z, XW8AL 1050z, 4S7IW 1150z.

Tubby VK5NO is on holidays this month, but managed to log the following 14 Mc. c.w.: VQ9HB 1313, 5U7AC 1955, FG7XI 2038, AP5CP 1318, JT1KAA 0825, VS5GS 1350, VQ8AV 1416, CR8AK 1445, CR7IZ 1530, HK1QQ 2038, 9Q5-AAA 2238. All GMT

Laurie VK2AMB adds the following to his previous notes. 8V0WI, ZS5CI, ZS6BDD, ZS-2KX, ZS3KU, ZE1AK, EI8US, VR4CV, EP2BB (14 Mc. c.w. wkd.). On 14 Mc. c.w. hrd.: 9M2SW. VU2AZ, CE3AD, VP2VB/M, 9M2UF, ZC4PC, VS6MB, VS6OC, FB8YY, VS1KZ, VS-

(Continued on Page 17)

S W L

OH0, KL7, ZD8, ON4, LZ, FF8, VP8, XW8, 5H3, W0

Sub Editor: ROBERT YOUNG, WIA-L3076,
14 Alverna Grove, Brighton, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Well, chaps, how did you find DX this past month? The h.f. bands seem a bit quiet, but the DX is rolling in on 6 and 2 mx.

Through this page I would like to thank Eric VK3ANQ for offering his services to the S.w.l. Group in regard to the S.w.l. Convention at Warrnambool. Eric has offered to arrange bookings for accommodation and anything else we need to make the Convention a success. A truly helpful thought I think you will all agree. Thanks very much for the thought Eric.

This will be the last opportunity to remind all s.w.l. who are interested in taking part in the S.w.l. Convention at Warrnambool on 3rd and 4th of March, 1962, to get in touch with me so that bookings can be arranged, so please don't forget.

Plans are being made to make the week-end a very interesting one.

I wish to welcome three new members to the group. They are Graeme Armstrong, John Hamilton and Raymond Reynolds. Hope to see you along at the meetings chaps.

Noel L3101 is on the move again on the construction of another 45 ft. mast. It will be in operation very soon with a 20 mx folded dipole suspended from it; that will make two dipoles, one for N. and S., the other for E. and W. Noel received eight very colorful Xmas cards from overseas stations (JA, W land and the Philippines). Some DX heard by Noel on 20 mx: JZ0BM, JA6BGX, ZK1AA, W1AIQ, DU-1AN, VK8AU (DX he says) and VK6LG.

Maurie L3085 took it easy over Xmas and New Year, having a holiday in VK5 land. Needless to say a form of communications receiver went over with him, also a 6 mx converter for listening to some v.h.f. DX.

The antenna for 6 mx was a folded dipole of 300 ohm ribbon lashed to a water pipe 15 ft. high which is rotatable; the only stations heard were in VK5. Some QSL cards received by Maurie: G13JIM, HK4KZ, 9G1BF, G2BSA, VE3FN and K3ICA.

Mac L3074 is listening hard on the v.h.f. bands, building up a score for the Ross Hull Contest. Unfortunately Mac had a bit of rx trouble during the Contest—the BC348 packed up. However an AR88 was loaned to him and once again was scoring in the contest.

RADIO MAIL

I wish to thank the following for their letters: Eric Trebilcock, Howard Burger, Bill John, and Peter Drew.

Eric Trebilcock, with his best recent QSL cards received: SM5BUG/9Q5 (killed in service of U.N. 17/9/61), 9N1GW (Nepal), TI2CMF, HP1IE, UJ8AC, GD2FBS, UI8AD, UA0KVA (Zone 23), VE3YD (Zone 2), OA4BW, KH6EDY/Kure, AP5CP, ET2US, LU2ZB (Antarctica), VP5BH/MM.

Best recent DX heard: 7 Mc. c.w.: OK1KUR, UJ8AL, LZ1KNB, HV1CN, OK2KOO, DJ7KH, DJ2AA, DL1JW, LA5HE/MM, and ZS5KI. 14 Mc. c.w.: KC6BD, KV4CI, CT3AB, 6W8DD, OA4JH, VK0JB, JZ0BM, VS9AAI, VS4RM, VK5XK/9 (Norfolk Island).

Howard L3113, up in Hamilton, says that DX has been very poor for some time but after putting in a new noise limiter and a new antenna DX is much better. Howard also has a 40 and 20 mx doublet and is considering putting up a 20 mx windom. Howard has QSL cards as follows: KC4USV, ZL3BL, ZL-2BE, W6QDD, KC6BE, ZW8AL. These stations were heard on 20 mx a.m.

Received a letter from Bill John way up their in VK4. He says he is still listening to the Hams and has just received a card from ZL8AI. Bill has heard 25 countries, also has 200 QSL cards on the wall of his shack. The rx set-up is a home-brew 6-tube super with one r.f. stage, antenna is a fan type—four wires each 30 ft. long, 40 ft. in the air. Here are the QSL cards received by Bill: HI8DGC, KG6AJO, VE3EM, OE1NV, VK9GR, W9BGQ, VR1G, YA9KOT, YV4EH, VK8OW, ZE5JA, FK-8AU, 9M2DQ, OA4DT, ZS6AUZ, XE1FB, G3KO, ZL8AI (Antarctic), JA7TJ, DJ1IJ, KG6AIY, ZL2UD.

Now a few words from the DX hound over in VK6, that's him, Peter L4031. On 20 mx, the band is usually poor all day except from about 1100 GMT to 1600 GMT. Between these times the band is usually excellent towards Asia, the Middle East, North Africa and occasionally it opens to South Africa and West Europe. A few of the most interesting stations which have appeared on 20 mx are EP2BK, EP2BE, VE3BQL/SU. These stations are apparently new on 20 mx and put in 5 and 9 signals. Occasionally the band opens to U.S.A. around 1300 GMT.

Now for some of Peter's DX heard 20 mx phone: VU2PP, VS1JX, KG6AJI, ZE7JB, VQ-8BM, VU2PI, VE3BQL/SU, EP2BE, UR2BU, DU6TY, LA5HE/MM, EA3IG, ZS6AUO, ZE2JE, CN8CS, FB8XX, XW8AL, OD5CY, DU1VVS, W1RZA/MM, I1BAX, LA7RF/MM, VQ8BL, YK-1AK, ZC4GT, 9M2FN, MP4TAQ, VU2TD, ZS-2KY, DU1TOM, Ws and ZLs.

20 mx s.s.b., UP2CG, UA4CE, UW3UF, TI-2LA, AP2AD, OH3PC, Ws. 20 mx c.w., VU-2RM, W2DEC, W3JTC, VU2GD, UA8KEB, 9M2UF, 4S7NE. 40 mx phone: JA2BAY (s.s.b.), ZL1IB. 40 mx c.w.: W4IXJ, W8FWQ, WA6NNJ, W9ERU, JA1BRK, W3CTJ, W8CMB, VK2AUS/MM. 80 mx c.w.: K6BPR, W6GRX. Cards that Peter received: VK2APL, VR4CB, K6JBP (7 Mc. c.w.).

Well chaps that's all we have for this month. It seems the postman is on holidays. 73, and best of DX. Robert L3076.

DX LADDER

	Countries		Zns.		s.s.b.		W
	Conf.	Hrd.	Conf.		Conf.	Hrd.	Stat.
E. Trebilcock	274	280	40		—	—	50
D. Grantley	91	234	37		—	73	—
A. Wescott	76	157	31		31	92	—
M Hilliard	66	208	38		5	100	11
M. Cox	36	209	20		6	118	14
C. Abernethy	30	57	21		—	—	13
P. Drew	57	171	17		5	68	4
P. Fields	26	153	—		—	—	—
N Harrison	53	57	14		—	—	23
I. Thomas	17	171	17		6	68	4
D. Jenkins	10	141	7		—	—	—
H. Burger	6	185	5		1	19	—
N. Fisher	3	30	3		—	—	—

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK5AB	45	256	VK5KW	4	206
VK6RU	2	253	VK3ATN	36	204
VK6MK	43	251	VK4HR	11	192
VK3AHO	51	233	VK4RW	23	184
VK4FJ	21	221	VK3BZ	3	176
VK3WL	14	211	VK3GB	80	171

New Member:
VK3ARJ 56 102

Amendment:
VK3BM 54 114

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB	10	300	VK4HR	3	218
VK3CX	26	286	VK6RU	16	216
VK4FJ	29	264	VK3XU	48	213
VK3NC	19	250	VK7LZ	17	212
VK3FH	15	236	VK3YL	39	211
VK3BZ	6	222	VK9XK	41	204

New Member:
VK7SM 72 110

Amendments:
VK2EO 2 197 VK3ARX 66 171

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK2ACX	6	289	VK3HG	3	241
VK6RU	8	274	VK3AHO	78	235
VK4FJ	33	267	VK4HR	7	233
VK6MK	74	255	VK3BZ	4	231
VK3NC	77	255	VK3JA	43	229
VK3AGH	83	245	VK3WL	45	225

New Member:
VK7SM 64 127

Amendments:
VK5NQ 21 163 VK3BG 80 112
VK2APK 82 153

DX NOTES

(Continued from Page 16)

9AGV, MP4BCP, CR7GH, SV0WN, SH3HZ, US-7NE, ZE3JO, VQ4HY, 5R8CQ. (Laurie says he has no QSLs to hand recently, as the rare ones are still hard to get a card from.)

ADDRESSES

9G1DE—Box 123, Dunkwa, Ghana.
KM6BV—C/o. T. Tougas, WA6ROP, San Diego, California.
KV4BQ—Box 745, Frederiksted, St. Croix, U.S. Virgin Is.
KX6CG—U S C G Loran Stn., A.P.O. 187, C/o. P.M., San Francisco.
VK5XK/9—Arch Hewitt, Lucindale, 5th. Aus.
VR4CV—Alan Vegas, Box 49, Honiara, B.S.I.
Ex SM5BUG/9Q5—Via SM5AIO.
LU1ZL—C/o. Doug Beaudoin, via W9DHQ.
KC4USN—Via K1NAP, Comcblant, U.S.N. C.R.B.U., C.B.C., Davisville RI, U.S.A.
MP4MAH—Via R.S.G.B.
TN8AF—Via R.E.F.
VQ5IB—Box 363, Kampala, Uganda.
4W1AA—C/o. OK1PX.
MP4TAC—Sharjah, Trucial Oman, Persian Gulf, B.F.P.O. 64.
MP4TAQ—C/o. DJ1BZ.
9K2AM—Box 148, Kuwait.
MP4BDP—C/o. R.S.G.B.

PREDICTION FOR FEBRUARY

21 Mc. This band should be fair at least, particularly in the early mornings. The l.p. to the West to Central America might open up around 2100-2300 GMT. Then the band sometimes has a lively period for an hour or two around 0330 GMT when South America and South Africa sometimes appear. During the afternoons there should be sigs from W fairly consistently. However, the band performed in a manner most uncertain last month.

14 Mc. If there is a change on this band during February it should be for the better. The early Europeans will remain but will show up again on the l.p. in the early afternoons around 0430 GMT. There will be the usual Ws of course as the afternoon progresses, and at night the band should be lively to all continents, but conditions are not reliable.

7 Mc. This is a night band from the DXers' point of view, and should work in a similar manner to last month. In the early evenings it will be mostly quiet, with an occasional South American and some openings to Central America. Around 1200-1400 GMT the JAs and Asians build up in strength. This is followed by an hour or so of the Ws from the West Coast. These fade and the band then slowly opens to the West, and the skip lengthens as the night grows older. At 2100z there may be an opening l.p. to East Coast of U.S.A. This latter during the past month occurred only very seldom and for short duration.

It is pleasing to see "A.R." with a new look this month. We might advantageously follow the example with regard to our Ham shacks. Most dens of DX endeavour would be the better for a little progressive thinking as to set up and lay out. Stand well back and look it over. (I hope you don't come to the same conclusion as I do. I'll guarantee there's several things needing attention, be they electrical, physical or something that offends the eye from an artistic or functional sense. I still think that QSLs on the wall behind the rx and tx, set up properly under the right lighting, enhance the whole show.

Yes, it's true that last month's joke was a censored version. There's none this time. I've submitted one to the Editor but I'm quite certain he'll scrub it. (He did.—Ed.) 73, VK4SS.

P.S.—I must crave your indulgence, for this month's somewhat disjointed arrangement of the column. Because of the holiday break, it was necessary to do it in two parts.

V.H.F.

50 – 144 – 288 – 576 – 1296 Mc.

Sub Editor: BILL ROPER, VK3ARZ,
Lot 59, Orchard Street, Mount Waverley, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

The month of December 1961 turned out to be one of the best periods ever for v.h.f. DX.

The 50 Mc. band was open to all States nearly every day and ZL was worked on numerous occasions. But the biggest thrills of the month were on 144 Mc.

The record breaking opening on Dec. 27, when 4ZAX worked VK3, 5 and 7 with sigs peaking to S9, established that Sporadic E does exist on 144 Mc. although it is about ten years since the last recorded opening (5QR and 5GL to 6BO).

4ZAX's close watch on short skip on the 50 Mc band really paid dividends and, I hope, proved an object lesson to many other stations.

Then on Dec 30, VK2ASZ worked ZL3AQ on the same band and on Jan. 2 VK2ZVL worked ZL1AUM crossband—50 and 144 Mc.

Another historic report is the reception of 3ZFM's 144 Mc sigs by 6BE on Jan. 6.

I certainly hope that the news of these reports shocks the majority of 144 Mc. stations out of their lethargy and instils into them a renewed interest in DX.

Also, I trust that the various stations involved in the record breaking contacts will make application to David VK3QV to have these recorded officially.

The application must enclose a QSL card from the other station, and should state the latitude and longitude of your location as accurately as possible.

It will be obvious that a ridiculous position will arise if these contacts are not officially recorded.

It is very interesting to note that the V.h.f. Century Club awards are finally available. Perhaps these may add new interest to the flagging practice of QSLing.

The Ross Hull Contest is now over and many good scores were totalled. A large number of stations participated and it is to be hoped that the majority enter logs. Do not delay because there is little time left.

I was very pleased to receive information for the notes from a number of Amateurs other than the appointed scribes and this news has been incorporated in the notes. However, it would be appreciated if these people could send their news to the scribe in their own States, and post it to reach him no later than the second day of the month preceding publication.—3ARZ.

PROJECT "OSCAR"

The American "Orbital Satellite Carrying Amateur Radio" was launched, it is understood, on 12th Dec., 1961, but information regarding pass times was not received at this QTH until Dec. 17 when the VK3WI Sunday morning broadcast carried brief details. The satellite tx was first heard about midday on 17th and from this and later passes was established to be in a polar orbit travelling south in the daytime and north at night.

A simple way of predicting pass times was evolved and altogether 29 passes were logged of the 60 odd which would have been audible before the batteries ran out about Dec. 31. The frequency of 144.075 Mc. was slightly lower than the published 145.00 Mc.; the maximum Doppler shift observed was about 6,500 cycles. Signals on an overhead pass peaked to about S8 and were audible for up to 12 minutes, best DX therefore being about 1,700 miles, which isn't bad for a 100 milliwatt tx.

Anyone who made observations of times, bearings, etc., and would like to submit a log to the Project Oscar Association is referred to "QST" for July '61 which gives details of the standard log form and reporting procedure.—3ABP.

VK2ZLP's three element 50 Mc. beam (top) and his 13 element 144 Mc. beam (bottom).

NEW SOUTH WALES

The Ross Hull Contest got away to a good start on 50 Mc. on Sat. 16th with openings to VK3, 5, 7 and ZL1, followed by VK3, 4, 5, 7 and ZLs on Sunday. 2ZLP (Armidale) contacted 2ZDM (Hilston) for the first time; one of the few VK2 stations he has worked on 50 Mc.

Occasional contacts then until Wed. 20th when VK6s came through in force. The big opening came on Wed. 27th and lasted until Monday, 1st Jan. The band was open all day every day to all States and ZL; the best opening for several years. Unfortunately, JA and VK8 were both absent.

A feature of the opening was the short skip. VK2s in Sydney worked some of the country VK3 for the first time; also the country chaps made contact with one another. 2ZGC (Broken Hill), 2ZLP (Armidale) and 2ZAD were worked by 2ZDA in Sydney. 50 Mc. signals were so strong at times that tests were tried on 144 Mc. with some considerable success.

The big news on 144 Mc. is the contact between VK2ASZ and ZL3AQ on 30th Dec. (Details elsewhere this issue.) On Tues., 2nd Jan. VK2ZVL (Beverly Hills) worked crossband ZL1AUM (Auckland). Keith was running 150w. to a 5 el. beam on 50 Mc. and Colin (ZL1AUM) 100w. on 144 Mc. Colin's frequency was 144.135 Mc., the time 1030 hrs. and signals were R3/4 S4/5 with one 15-second peak of 5 and 9. Keith tried to make it on 144 Mc. but ZL1AUM could only just hear the carrier from his mobile tx.

Alan 2RX worked Gary 2ZK on 144 Mc. on Dec. 30 about 1745 hrs.; signals were 5 and 9. VK5 sigs were also heard in Sydney on 27th about 1700 hrs.

The Midsummer Field Day was held on Sun., 30th Dec., on 144 Mc. and about 40 stations were active, despite the rainy weather. The Newcastle gang were out in force and some excellent contacts were made. Details will be known WHEN? the logs come in.

At the Dec. V.h.f. Group meeting our annual sale of members' surplus items was held. A very popular night, but too much junk was offered this year; not up to the usual standard. How about better selection next year.

The Dec night event was a fox hunt on Sat. 16th and, at the completion, a Xmas Party was held at the home of our chairman 2ZAG. Fifty fox hunters, XYLs and harmonics enjoyed themselves until the early hours.

Dick 2ZCF has produced a 144 Mc. trans. which he calls the "Minimitter," a 3-tube rig, 12AT7 osc./mult., 12BY7 doubler/p.a. and 6BM8 mod. A circuit has been drawn out and a parts list compiled. So far a dozen or more copies have been built by members and several are in use as mobile outfits. (How about an article for "A.R."—Ed.) A request and stamped, addressed envelope to Tim 2ZTM will get you a circuit, layout and parts list.—2ZDP.

VICTORIA

During Dec. 50 Mc. has been very active with plenty of openings in all directions. Before Xmas they were mostly during the late afternoon and early evenings with VK2, 4, 5 and 6 being heard and worked, plus an occasional opening to ZL1. Over the holiday period conditions livened up with good openings to all States, and ZL being worked consistently. On Dec. 30 it opened to VK7 for a period, enabling many VK3s to add VK7 to their States' tally. Brief glimpses of VK8AU were heard, but he has not been worked to date.

Generally there was not the great number of stations operating as some previous years and the band was not quite so congested, although it is still very difficult to get a contact while operating above 50.5 Mc., even when the lower section is packed.

144 Mc. activity has been at a fairly high level during the Ross Hull V.h.f. Contest and some high numbers are being exchanged. Of course the highlight of the month was the QSO between 4ZAX (Brisbane) and 3ZJQ (Edithvale) on Dec. 27 at 1325 hrs. with sigs peaking 5 and 8 both ways. Congratulations are in order to Dane and George on their achievement. The value of observing skip conditions on 50 Mc. really paid off for 4ZAX. Local DX conditions have been favourable and VK5 and 7 have been worked on a number of occasions.

The Dec. V.h.f. Group meeting was held just prior to Xmas with 40 members in attendance. It was an 'open night" and after dealing with the business everyone participated in an "introduction" where each one gave a brief talk on their gear and what their occupations were. Some very interesting people amongst us.

The rules for future scrambles were finalised and they take the form of individual events with the scoring as follows: 1 pt. for stations contacting each other within the 30-mile radius from the G.P.O. Melbourne, 2 pts. for a city to country station (outside 30-mile radius), and 1 pt. for country to country regardless of distance. The control station to be the winner of the previous event and is not to participate in the event he controls. These rules apply to both 50 and 144 Mc.

With the retention of 478 Victoria Pde., East Melbourne, as our rooms, plans were quickly made to resume work on 3WI v.h.f. gear and I am happy to say that work has resumed and the equipment should be in operation at an early date.

It is unknown when we will return to 478 for our meetings, but keep listening to 3WI broadcasts on Sunday mornings for the latest news. There is still a lot of work to be done and your assistance will be greatly appreciated when volunteers are required.

Dates to remember: V.h.f. Group meetings, third Wed. of each month; 50 Mc. scramble, fourth Sun. of each month, 144 Mc. scramble, second Sun of each month, fox hunts, second Wed of each month, v.h.f. field days, third Sun of March and April.—3ZGP

QUEENSLAND

During Dec. the 50 Mc. band was open almost every day to either VK3, 5 or 7. VK8AV was worked by local stations on Dec. 5. ZL stations were worked on Dec. 16, 29 and 31 and maybe also on other days of which I have no knowledge. Also notable were openings to VK4 northern stations, and VK2 via the ionosphere which, although a rarity, is not altogether unexpected at this time of the year.

(Continued on Page 21)

144 Mc. TRANSMISSIONS

Below are the details of the various high-powered stations operating on 144.00 Mc. who are attempting to establish contact right across southern Australia. VK4ZAX (who runs 150 watts a.s.b.) also joins in at the times indicated.

Mondays—
6BE, 6WG, 5AW, 3NN, 3ZJQ.

Tuesdays—
6BE, 5AW, 3NN, 3ZFM.

Wednesdays—
6WG, 5AW, 3NN, 3ZJQ.

Thursdays—
3NN, 3ZFM.

Fridays—
6BE, 6WG, 5AW, 3NN, 3ZFM.

Saturdays—
6BE, 5AW, 3PO, 3ZJQ.

Sundays—
6WG, 5AW, 3PO, 3ZFM.

TIMES OF OPERATION (E.A.S.T.)

VK6 Transmit	2100–2115
VK5 and VK4ZAX Transmit	2115–2130
VK3 and VK4ZAX Transmit	2130–2145
VK6 Transmit	2145–2200
VK5 Transmit	2200–2215
VK3 Transmit	2215–2230

VHF NOTES

(Continued from Page 19)

Rare 50 Mc. stations heard on recently in the Brisbane area include VKs 4UW, 4ZAV, 4EZ 4ZCR and 4ZBQ. These chaps should make themselves heard more often. A new station on 50 Mc. is Royce 4ZRH, who is using a modified 522 into a 5 el. yagi. Rx is a tuneable conv. into a No. 19 rx. Royce took his rig to the Gold Coast over the holiday period and apart from working his first DX, had other fun (t.v. fringe area, hi!). Welcome to 50 Mc, Royce. Also known to be holidaying on the Gold Coast are 4ZDJ and 4ZEL. 4ZBF was mobiling at high speed through northern VK3 during late December.

Now for the news of the century. Dane 4ZAX was working normal DX on Dec. 27 when the skip shortened to central VK2. Dane then called several VK3s and VK5s and pursuaded them to listen on 144 Mc. Contact was immediately established and Dane filled a whole page of a log book with VK3, 5 and 7 144 Mc. stations. These contacts were two-way a.m. and propagation was E layer reflection. Other local stations which jumped on the 144 Mc. band wagon were 4BT and 4HD.

On Dec 13 4ZAX heard 2WQ (Grafton) working 2ZCQ (Bellingen). On the following night Dane worked both stations. Full credit must go to 2WQ who was only using low power and a 2 el. beam.

The Dec hidden tx hunt on 144 Mc was organised by 4ZGD who forgot the tea. The tx was hidden on the road to Mt. Glorious and 4ZBF with 4ZDK as navigator arrived first. 18 cars filled with Hams and their families took part.

On Dec 3 the Ipswich gang on 288 Mc. found that by turning their beams in the direction of Brisbane, contact was easily made. This is something that should have been done years ago.

4ZBZ and XYL Val have been visiting relations at Caloundra and as a result have missed much DX, but the holiday was badly needed. 4ZBA and XYL Anne have just returned from a long trip overseas during which they visited such countries as Egypt, Greece, Italy, France etc. Arthur brought some very nice gear back with him and this included a Geloso rx and s.s.b. tx.—4ZBT.

SOUTH AUSTRALIA

Towards the end of the last sunspot cycle peak (1958-60) some authorities predicted an increase in Sporadic E ionization. Observations over the past month tend to substantiate this claim.

Here in VK5, DX has been available practically every day on 50 Mc. and, in fact, the season is probably one of the best we have had for a number of years. All States have been heard and worked, including VK8AV on Dec. 18.

Openings to ZL have been prolific and activity over there seems excellent despite their considerable trouble with t.v.i.

Many accounts have been given in the press regarding freak propagation of t.v. and vehicle band signals, including reports of Interstate reception of the high band t.v. sigs (channels 7 and 8).

No JA sigs have been worked so far this season, nor has anything been heard of VK9 and VK0.

The long band F2 skip seems to have left us for at least another 9 or 10 years, however the fact that Sporadic E openings are so good as to permit occasional 144 Mc. DX is adequate compensation.

The 144 Mc band provided the most interesting news during Dec. At 1138 hrs. C.S.T. on Dec. 27, 4ZAV was 5 and 9 plus on 144 Mc. in Adelaide. At that hour he worked 5ZDR, 5AW, 5ZMK, 5ZK and 5BC. Other VKs heard later were 4HD and 4BT. At the time, skip on 50 Mc. was down to 200 miles at both ends. Signals were audible on and off for the remainder of the day until 2000 hrs. C.S.T. VK5 stations also worked into VK2 and on Dec. 29 5ZDR was audible in VK3.

Except for a brief burst on Dec. 13 no sign has been heard of Project Oscar in VK5, despite numerous hours of concentrated listening by several stations. 5ZMK was the lucky man on the 13th.

Occasional portable trips by 5JH are the only thing of interest on 288 Mc.

As a large number of TD03/10 valves have become available quite cheaply, there are signs of activity on 1296 Mc. On Jan. 5 5ZCR and 5LA conducted a mobile QSO over distances up to one mile. Modulated oscs. and superregens were used with a two wavelength 60 degree corner reflector on one car and a coaxial dipole on the other. TD03/10s are disk seal triodes with an upper frequency limit of 3K Mc. and 10 watts anode dissapation. They oscillate readily in a simple grounded anode trough circuit.

5ZCJ and 5ZDV now have the calls 5ZZ and 5WV, and Murray 5ZCT has passed the Morse. Congratulations chaps. Recent Interstate visitors here include 5AZY, 5ZCN and 1VP (on 144 Mc.).—5ZCR.

WESTERN AUSTRALIA

DX on 50 Mc. during Dec. has been very good with the Eastern States being worked almost every day. Several ZL stations were worked and this caused quite a stir. Antennae seem to be growing over here with several more long, long yagis already up and more to come.

The 144 Mc. band is getting quite active and the boys are very keen to work into the Eastern States on this band.

Rolo now has a xtal locked converter working on 288 Mc. and together with 6ZDS, 6ZAA, 6ZAV and 6HK is causing some very good activity on this band.

There are by now at least two stations with xtal locked gear on 576 Mc. and they (6ZDS and 6ZAA) have worked over a distance of some two miles.

It is very good to see so many stations participating in the tx locating effort from the home QTH. You were able to pair up with any other station and see if you could pin-point the actual location of a tx somewhere in the metropolitan area. Full marks go to 6DI and 6DR who were the closest in nominating the station for the two different spots.

We have often heard at length discussions on the use of v.f.o. control and over moulation. Keep these discussions in mind when the DX is about; make sure your v.f.o. is up to scratch and remember that when you get excited, wind down the modulation.

I hear that 6ZAS is getting married early in Feb. Congrats. Stan, but it seems a pity that a mere honeymoon should have to upset a nice portable jaunt to Cape Naturaliste.

The last fox hunt was held on Dec. 16 which coincided with the Group's Xmas Party. There was an extremely good attendance and 6RY was the winner of the hunt. A barbecue was then enjoyed at the QTH of 6ZBK even though he was in bed with a poisoned leg. Hazel did a stirling job and thanks go to all who helped with this evening.

Project Oscar was heard for well over a fortnight as it passed over Perth. Amongst the number of stations who tracked it were 6BO, 6RY and 6ZAV.

Remember that our meetings are held on the fourth Monday in each month in the D.C.A. Workshop Amenities Room in Guildford Road, Mount Lawley. Visitors and new members are always welcome.—6RY.

TASMANIA

As was the case throughout the rest of Australia, I believe, the 6 mx DX season in VK7 has been the best of recent years. All States (VK2 through VK8) and ZL1, 2 and 3 were contacted.

Early Dec. provided excellent openings to VK2, 3, 4 and 5, particularly during daylight hours. From the beginning of the Ross Hull Contest until the end of the month, 6 mx was open every day except for Dec. 21, 22, 23. Most common were VK2, 3, northern and western VK3 and somewhat fewer VK4 openings—in most of these latter we were competing against the VK3s.

Running through some of the highlights: ZL2 and 3 contacted on 17th, whilst they were working into VK3. It took some breaking through the 5s and some worrying moments were spent as the ZLs sigs fluctuated, however all six VK7s on the air were able to work into ZL. VK8AV was worked on 19th—here again we had opposition from VK3 but the 7 prefix seemed almost as rare to a VK3 as is a VK3 to a VK7!

The 27th, considered elsewhere as the best on record, was not so brilliant in VK7 (as far as 6 mx was concerned) -only normal VK2, 3, 4 and 5 worked—no short skip. The following day, however, 3ZL (Ballarat) was heard on c.w. but nothing from Melbourne; ZL3 stations heard but couldn't be raised.

In addition to VK2 and 4 on 29th, ZL1 and 2 worked; ZL1s are rather a rarity. The first VK8 of the season was worked while they were working ZLs—required straining the v.f.o. to operate on 51 Mc!

The best opening to Melbourne for over four years was noted on 30th. It was quite an inspiration hearing the band full of sigs—should happen more often. From all accounts the band stayed open overnight with 3s, 4s and 5s going strongly at 1 a.m. and still there in the morning! Perhaps the best opening to ZL was on 31st; 9 plus with little mainland opposition.

VK7s participated in the 2 mx DX activities. VKs 7ZAI, 7ZAQ and 7ZAO worked 4ZAX and 4BT on 27th (1,200 miles). 7ZAI was heard again on the 31st (1 a.m.). Dave 7ZAI got on the 600 ohm line in an attempt to spread the news but found that most 2 mx operators were still at their daily toil. 4ZAK appeared to be audible for over an hour. 7LZ in Launceston worked 3ZCW on the 28th, 3ZCW was heard by a number of Hobart stations but faded before contact could be made.

A number of stations have been receiving "Oscar" regularly, however no effort was made to obtain tracking data.

It is expected that there will be quite a considerable amount of portable operation from Mt. Wellington now that we have our beam stored there and the use of a.c. power at short notice. Watch for news of this during the coming months. 7ZAI has tested successfully a parasitic repeater which will be installed on the mountain. He seems to be rather secretive about the project.

Congrats. to Dick 7ZAN and Kevin 7ZAH who will be giving up a gay bachelor's life and securing an XYL in the near future. The worst of it is that neither of these chaps have been heard much on the air to date so the future looks pretty grim!—7ZAO.

NORTHERN TERRITORY

VK8AU is now firmly entrenched in a town with the apt name of Batchelor and has a 6146 fired up on 50 Mc. into a 4 el. beam. He runs an automatic keyer on week days, 0730 to 0800 and 1700 to 2000 hrs. beamed in the general direction of Melbourne and Sydney. Input is 90 watts and call sign is sent every ten seconds. On week-ends these transmissions run from 0700 to 2000 hrs. (all times E.A.S.T.). A chap in the Darwin area has passed his limited licence and will be on the air soon. There does not appear to be any other signs of activity in the Darwin area. VK8AV at Daly Water is still very active.—8AU.

50 Mc. W.A.S.

Call	Cer. No.	Add. Cntr.	Call	Cer. No.	Add. Cntr.
VK2WJ	13	4	VK3RR	6	1
VK2ZFM	22	4	VK3HT	7	1
VK4HR	4	3	VK3AEZ	10	1
VK3GP	5	3	VK3XA	11	1
VK2ABC	9	3	VK3QM	13	1
VK2VW	9	3	VK3ACL	14	1
VK5GG	19	2	VK3ZD	16	1
VK3ZAX	20	3	VK3HO	17	1
VK3ZBL	21	3	VK3ZEA	18	1
VK4RY	3	2	VK3WH	16	
VK5LC	1	1	VK5BQ	33	
VK6DW	2	1			

TWO CANADIAN AWARDS

THE ST. LAWRENCE SEAWAY AWARD

This award is issued by the Ontario DX Association and requires 10 contacts with VE stations located along the route of the St. Lawrence Seaway. Of these 10 contacts, four must be with the following four areas (one from each): Port Arthur or Fort William, Greater Toronto, Greater Montreal, Greater Quebec City. The remaining six may be any VE municipality situated along the route of the Seaway. Suggestions: Kingston, Cornwall, Prescott, Brockville, Gananoque, Whitby, Oshawa, Napanee, Hamilton, Niagara Falls, Windsor, Sarnia, Goderich, Manitoulin Island, Sault Ste. Marie, Nipigon, etc.

Seals will be available for 20, 40 or 50 contacts.

Any band, any mode—mixed or otherwise from July 1960.

THE CANADIAN AWARD

This award is also issued by the Ontario DX Association and requires five contacts with each of the eight VE Call Areas (40 contacts, five contacts with VO1/VO2 (any combination of five), and one contact with a VE0 maritime mobile.

Of the five VE eight stations, one must be in the Yukon Territory; also one must be located on one of the off-shore islands of the North West Territories.

Any Amateur band and any mode—mixed or otherwise after World War II, 1945.

The following data applies to both the above awards:

No QSLs need to be submitted. Instead, submit a list showing date, time, band and definite location of station contacted, and signed by one official of a radio club, or by two other licensed Amateurs. The cost is $1.00 or equivalent (8 I.R.C's.). Applications to the Ontario DX Association, Secretary Wm. A. Wragg, VE3BQP, 127 Castlewood Road, Toronto, Ontario, Canada.

SIDEBAND

Phasing, Xtal Filters, Balanced Mod., Linear Amps., Vox

Sub Editor: BUD POUNSETT, VK2AQJ,
6 Alice Street, Queanbeyan, N.S.W.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

VK2ON TRANSMITTER (Part 7)

Here is the last part of the description of the transmitter of Lindsay Douglas. I am sure that many of us have obtained some useful ideas from this interesting series. May I thank Lindsay for his work and support of this page.

T-R SWITCH

This extremely useful device follows the design of Lex VK3AIL. It uses the pentode section of a 6BL8 which is mounted on a small sub-chassis behind the front panel near the final tank coil. The glass tube is unshielded and the components have only rudimentary shielding from the tank. The essential part is the untuned output transformer which is constructed from a Ducon Q ring. The voltage out does not exceed 2.5 when on "transmit". The only disadvantage with this device is that the final tank has to be tuned to the same band as the receiver to obtain signals.

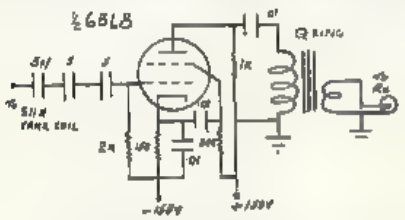


Fig. 1.—T-R Switch.

Three 5 pF. mica condensers in series are used to feed the grid and taking the input capacity of the tube into consideration, the grid receives about a quarter of the tank voltage. The device gives a slight gain on all bands compared with connecting receiver direct to co-ax antenna line. The 150 volt grid bias supply is used for convenience.

Fig. 2.—Q Ring.

Primary: 14 turns No. 24 enamel over quarter circumference. Secondary: 5 turns p.v.c. wire over primary.

A.L.C. CIRCUIT

Having a spare triode section to play with, what better use than putting in a.l.c. facility? This system, employed in Collins tx's, prevents flat-topping by applying rectified bias to the 9 meg. amplifier when the r.f. output exceeds a set figure. With the linear described in Dec. issue, the setting of P1 is best at 50 to 60 volts. The bucking voltage is measured with the meter-switch in position one. The setting varies with the frequency and band in use.

Adjustment in the first instance is done when watching the c.r.o. pattern. By lowering the voltage gradually the system will come into operation and this will be shown by a decrease in the cathode voltage of the 9 meg. amplifier from 3 to 2.5 or 2 volts.

Used in moderation (with monitoring of this voltage) the audio a.v.c. effect will prevent "splatter" and induce friendship with Ham neighbours.

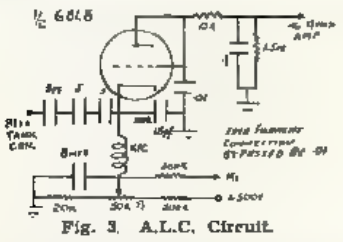


Fig. 3. A.L.C. Circuit.

The heater pins should be by passed to chassis to prevent unwanted pick-up of r.f. by the cathode. The circuit constants shown here gave best results and many variations were tried. If the bucking voltage is set too high (say 90 volts) there is a tendency to develop positive instead of negative a.l.c. bias. The reason for this is not understood.

Modifications to the 9 meg. amplifier include removal of variable bias, wiring of a 30K bleeder to the cathode, and a 10K shunt for the primary of the output transformer.

Once can obtain more modulation capability with a.l.c. This is not very obvious on listening tests, although it can be seen on the c.r.o. As used here, there is no distortion arising from the system. It should be especially useful for Class AB1 and ZL linear type amplifiers which tend to cut off sharply when grid-current flows.

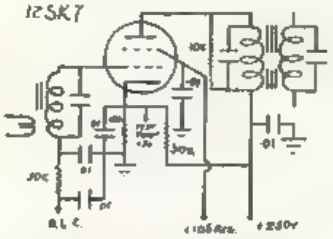
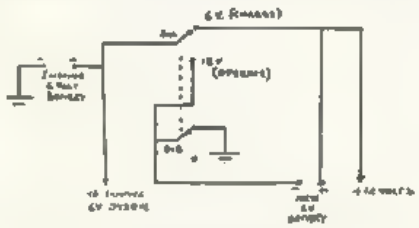


Fig. 4.—Revised 9 Mc. Amplifier.

Now that you have heard my story from A to Z, I must warn that further modifications to the transmitter are in view and if you would like to hear of them please let me know.

BON VOYAGE, VK2AQU

After spending some time at the R.A.A.F. Operational Command Headquarters at Penrith, Wing Commander Colin Harvey, VK2AQU, has been posted to Singapore. Col sailed from Sydney on 17th December and expects to be on from his new location by late January. Col has taken his s.s.b. equipment with him, so keep a look-out for a new VS1 call. His new address will be: C/o. F.E.A.F., Changi, Singapore.



V.W. 12 volt source.
(From "QST," Nov. '61.)

S.S.B. CONTEST

Here is some advance information from Dorothy Strauber, K2MGE, of "CQ" magazine about a very popular contest. Below is an extract from January 1962 "CQ". Contest logs are available from your sub-editor's address, please accompany your request with a stamped self-addressed envelope. Logs may be forwarded direct to "CQ" Sideband Editors, 12 Elm St., Lynbrook, New York, U.S.A., not later than May 30, 1962. If you wish, send your log to me for forwarding to the U.S.A.

The Sixth Annual "CQ" World-Wide S.s.b. Contest will take place the last week-end in March 1962 from 1200 GMT, Saturday, March 24, to 1800 GMT, Sunday, March 25, **with only 24 hours of operating permitted.**

There are several changes of rules in this year's Contest so please read the following carefully.

As usual, the object of the Contest is to work as many stations and as many different prefixes on s.s.b. in the world as possible. (A "prefix" is considered the two or three letter/numeral combinations which form the first part of any Amateur call. The following would all be considered **different** prefixes: W2, K2, WA2, WA6, 5A1, 5A2, DJ1, DJ2, etc.) A prefix may only be worked once during the contest!

The Contest is open to all sidebanders in all parts of the world and all authorised Amateur frequencies may be used.

Here is a major change. To return this Contest to the status of a strictly DX Contest, contacts between stations in the same country will not count, except for the prefix multiplier. In other words, U.S.A. stations **cannot** count other W/K/WA stations for points, but they may work W/K/WA stations for the 23 different prefixes in use in that country ("W" calls in 10 districts, "K" calls in 10 districts; WA2, WA4, and WA6 calls, making 23 prefixes in all at the time of this writing. As other WA calls are added in other districts, they, of course, count as separate prefixes.) For purposes of this Contest, Alaska, KL7, and Hawaii, KH6, count as separate countries. See the rule of scoring for additional information on points.

Another change in the rules this year is that the same station may be worked **once** on each band for purposes of accumulating points and therefore you must submit separate log sheets for each band worked. For example, if you work HB9TL on 20 metres, you may also work him again on 10, 15, 40, and 80 metres, adding the proper points each time. As mentioned before, however, once you have worked the HB9 prefix on any band, you cannot count it again.

Only one transmitter may be in operation from any station at any one time and **only the licensee of the station may operate** (except at a club station where one duly-designated club member may operate at any one time).

You will note that the time span of the Contest has been changed this year and for a very good reason. Due to changing propagation conditions, the Contest time has been changed to give U.S. stations two full early morning DX periods for the higher bands and one full night of operating for the lower bands. This will give everyone a chance to work more DX at the best openings under today's conditions. The time indicated covers 30 hours but, as usual, a participant must not operate for more than 24 hours. The six hours of non-operation **must be consecutive**—at the beginning, end, or any six hours during the middle of the Contest—and must be **clearly designated** in the Contest log. Contestants may, of course, operate less than 24 hours if desired. Logs not indicating a 6-hour silence period will be disqualified!

Scoring.—The Contest exchange shall consist of the usual Q and S report, followed by the serial number of the contact. For example, the first contact might be 59001; the 67th contact would be 59067, etc. **All times must be entered in GMT!**

	Points 10, 15, 20.	Points 40 & 80.
Contacts with Own Country (KH6, KL7 count as separate country)	0	0
Contacts with Different Country on own continent	1	2
Contacts with Different Country on Different Continent	2	4

Final scores are determined by multiplying the **total** number of points achieved on all bands worked by the total number of different prefixes worked.

The operator's name, address, call, rig, power input, total number of points, total number of prefixes worked, and the final score must be indicated on a **separate sheet** attached to the front of your log.

Awards: The K2HEA-K2MGE trophy will be awarded to the highest scoring operator in the Contest.

The W2SKE trophy will be awarded to the highest scoring W/K operator in the Contest.

The W8YIN Memorial Trophy will be awarded to the highest scoring W/K operator **using less than 175 watts.**

Certificates will be awarded to the highest scoring contestants in each of the U.S., Canadian, and Australian call areas as well as in other countries from which log returns indicate a minimum of three participating stations.

DO NOT FORGET THE
NATIONAL FIELD DAY
ON FEBRUARY 10-11

FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

★ ★

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL QSL BUREAU

The log of VK9AD, who had 6,000 QSOs from Norfolk Island, is in the possession of VK3CX. Alan will issue the necessary cards on receipt of s.a.s.e. from VK stations or I.R.C. from overseas stations. His QTH is Alan G. Brown, 8 Mangarra Rd., Canterbury, E.7, Vic.

The Western Penna DX Society advise that contacts eligible for their award, must be after Nov. 30, 1960.

The Quarter Century Wireless Assn. publicity officer, Cliff Evans, K8BX, announces the Association's 5th Annual QSO Party from 2300z on Feb. 9 to 2300z on Feb. 11. He states that close on 3,000 members will be on the air to help aspiranis for their regular awards. Operation is scheduled as follows:—

C.w.: 3.5, 7, 14, 21 and 28 Mc. bands.
A.m.: 3.5, 7, 14, 21 and 28 Mc. bands.
S.s.b./i.s.b.: 3.5 and 7 Mc. bands.
S.s.b./u.s.b.: 14, 21 and 28 Mc. bands.
R.t.t.y.: 7 and 21 Mc. bands.

The L.R.E.M. (Mozambique) forwards details of their W-CR7-A award for 15 contacts with CR7 stations since 12th Jan., 1949.

The Radio Society of Southern Rhodesia announce their W.A.Z.E. award for two contacts with each of the five ZE call areas, since 1 Jan. 1961.

The Lebanese Radio Assn. announces an award to stations contacting 10 Lebanese stations since 1st July, 1958.

Full details of any of the abovementioned awards may be had from this Bureau.

Cards through this Bureau rose sharply during December, but in view of prevailing band conditions, the upward surge should be short-lived.

1962 French Contest. C.w. from 1400 GMT on 24th Feb. to 2200 GMT on 25th Feb. Phone: 1400 GMT 14th April to 2200 GMT 15th April. Code: RST or RS and number of the QSO. Points: 3 with each contact with station in D.U.F. country. Multiplier: 1 for each French department or each D.U.F. country other than F and FC—for each band. Score, points x multiplier. French stations of the metropole give after their call the number of the department. Send logs to R.E.F., B.P. 42-01, Paris, France. These logs are available for reference to any French award application. QSL are not required for these QSOs.

R. Jones, VK3RJ, Manager

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FEDERAL AWARDS

AUSTRALIAN V.H.F. C.C. AWARD

As at 6/1/62 the following awards, for the number of confirmations shown, all phone, are announced:

No. 1—Vol. Molesworth, VK3VO/T (ex VK-3ZDD), 144 Mc.—100.
No. 2—George Gormly, VK5GG (ex VK-5ZGA), 50 Mc.—114.
No. 3—David Rankin, VK3QV (ex VK3ZAQ), 144 Mc.—165.
No. 4—Adrian Rofe, VK2HE, 144 Mc.—102.
No. 5—Adrian Rofe, VK2HE, 50 Mc.—118.

—Alf Kissick, VK3KB, Awards Officer

(Congratulations are offered to Alf VK3KB upon attaining the total of 300 countries worked on c.w. in the W.I.A. D.X.C.C. Editor.)

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AUST. CAPITAL TERRITORY

During the festive season, conditions were fairly quiet in the Federal Capital and even the tourists stayed away to some extent. Sid 2SW was contacted on his way through from Cooma and we hope the rest of his trip was pleasant.

The 8.45 a.m. net on Saturday mornings is working well and up to eight VKIs participate regularly, exchanging comments and news items. At present the net operates only on 40 metres but shortly will be operating on 2 mx as well. Visitors are welcome on this net so call in at any time and hear about the activity in VK1 land.

Several of the local lads are away at present. Eddie 1VP is reported to be mobile on 2 mx in VK3, Merv 1ML is in Sydney and David 1DG has been out bush with the local Scouts for a couple of weeks.

Two new tx's have been heard since Xmas. Tony 1SG has been putting out a very nice 10 watts and Richard 1RS has been heard with a nominal 90w. though seems to be losing the soup somewhere on the way out. Ted 1AOP has not been heard since his recent marriage. He claims that he is shifting to a new location and we look forward to hearing him again soon. Les 1PI has not been heard for some time but the grape vine says he is building a s.s.b. rig. When can we hear it Les? Ron 1PM had a sudden urge to listen on 6 mx recently and was so impressed that he converted his 2 mx exciter to 6 mx and made several contacts. This appears to be a first for VK1 as it seems that no other VK1 has been on 6 since the call was issued.

A Field Day is being held on Sat., 3rd Feb., in conjunction with local Scout Troops. This is partly in response to requests from participants in the Jamboree of the Air and also to serve as a curtain raiser to the National Field Day on the next week-end. Contacts will be welcomed from outside VK1 by stations participating on the local Field Day and of course on the next week-end also. Incidentally, VK1s will be working all bands up to 288 Mc. for the National Field Day and will be looking for v.h.f. contacts particularly. With a little luck, VK1 should be on top of the list when the Field Day is over.

Your scribe was rudely awakened from a holiday nap at 8 a.m. one recent morning by one of the local gendarmes with a complaint about b.c.i. which had been received at the local Police Station. Seems that the irate listener could hear nothing but yours truly on his custom-built high fidelity outfit and got so annoyed that he called the local constabulory to help out. Putting it mildly, he was most unhappy about it and failed to appreciate the privilege of being the owner of the only broadcast set in the neighbourhood which can receive my transmission. Some people are hard to please. Anyway the problem was solved as the listener was shown which was the faulty tube and next time the interference occurs he is going to tap it with a large hammer till the light goes out. I guaranteed that this would cure the trouble. Back to the asylum.—1DG.

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NEW SOUTH WALES

One of the most pleasing functions of the year in Wireless Institute activities is the meeting held immediately prior to Christmas each year. The meeting held last Dec. was no exception and was well attended by some 60 members, wives and friends. The meeting was opened as usual by the President Bill 2YB, who welcomed the visitors and members. Visitors present included Dudley 2DQ, VR2DQ/VK2DS, and K6VVY. The appointment of Frank 2ACQ as councillor of the Division was announced. Frank hails from Narrandera, and will, during his stay in Sydney, assist Council by presenting the views of the country members. Ten new members were admitted to the Division. The balance of the evening was devoted to the showing of films of general interest. These had been organised by our Secretary, Bill 2EQ, who was ably assisted by Peter Harding in their presentation. Following supper, the meeting closed at 11 p.m.

The high standard of the lectures at general meetings is well known to our members, and some more in this series are being arranged by our Education Officer, Harold 2AAH. Those many members attending the meeting to be held on the fourth Friday of February at Science House, Gloucester Street, will hear Barry 2ZAG, who will discuss the "Future of V.h.f. in Amateur Radio." This will be an interesting lecture and all members are urged to attend and support our lecturer.

SILENT KEY

It is with deep regret that we record the passing of:—

VK3BU—Bill Brownbill.

ADAMS TROPHY

Reference in these columns has frequently been made to the Adams Trophy, which was donated some years ago to further the interest of members of this Division in writing articles for "Amateur Radio." The trophy is a handsome one, standing some 14 inches high and is annually awarded for the best contribution by a member of this Division of a technical article for "Amateur Radio." Unfortunately, the response is not always as may be expected but nevertheless a committee is set up each year to decide the winner of the award.

The committee this year consists of Harold 2AAH, Vol 2VO, and Ted 2ACD. This group have met and following research into the articles published during 1961, have decided that the winner of the Adams Trophy for this year is Vic 2VL, whose contribution was an article on "Reference Shift Modulation for Mobiles" and which appeared in October 1961 issue.

We congratulate Vic on his effort and at the same time thank the other VK2 subscribers for their efforts and hope that more such articles will appear in the coming year and will therefore make the committee's task more difficult.

A.O.C.P. COURSE

The popular A.O.C.P. courses which have been conducted by this Division are to be continued again this year. The new course will commence on Wed., 14th Feb., 1962, and will be conducted bi-weekly under the control of the Class Manager and Supervisor, Mr. C. Bardwell, VK2IR, who has been so successful with this work over the past year. We are hoping that the response will be even greater this year than in the past, so budding Amateurs are advised to announce their intention of participating immediately to the Class Secretary, 14 Atchison St., Crows Nest, N.S.W. Remember that there is also the Correspondence Course for those who cannot get to Sydney. Enquiries will be promptly attended to by Mr. Bardwell.

HUNTER BRANCH

The usual type of Christmas festivities prevailed at the December meeting. A jolly gathering of one dozen members, seven associates and three visitors were present. After some general business had been transacted, Bill 2XT, recently returned from oriental wanderings, gave an interesting interlude of coloured pictures, ranging from views inside v.h.f. gear to Japanese soap advertisements and scenes from many parts of the mystic east and Fassifern. Later supper was served. A great deal of money was changing hands by this stage, but I was assured it was for the purchase of the remainder of the 109 sets. So closed 1961 for the Hunter Branch.

Activities during the festive season have remained very much as usual, but a burst of good conditions on 40 mx produced quite a deal of activity there and local stations not heard for many moons were audible. Among these were two Harrys—2YL and 2GH—both coming in at good strength. The v.h.f. men, I am told, are also having a good time just now with signals coming in from distant places. Bob from Belmont, otherwise known as Belmont Bob, at last managed to get his aerial poles up and now has a good signal at his QTH.

I am reminded of a story of a man who does a roaring trade in the carrying business. At the completion of a job the other day, his customer asked, "Would this be of any use to you?" This aforesaid man said yes without looking and found to his surprise when he arrived home that it was a frequency meter with a power supply in good condition. Of course some people have Christmas all the year round.

It's just as well that Christmas is not more frequent at Shannon's. He already plays billiards well enough, but when double the number of balls appear on the table, it makes it so easy. I was wondering why he complained of having a headache.

Whether due to bad conditions or the over indulgence of members, a very small roll-up was evident on New Year's morning on 40 and 80 mx. Two lakeside members had to talk to one another to be the only representatives from Newcastle and district. It was not so during the latter days of '61 though and Ben 2ABT could hear us all even though he had the aerial disconnected. Wally 2AXH and Harold 2AAH also joined in and a good time was had by all.

Our Secretary, Gordon 2ZSG, has carefully disguised his 144 aerial to look like it's used for t.v., thus fooling all the neighbours. Ian 2AJF is now working for a living so you may hear him on soon. Harry 2AFA has the new 20 mx beam swinging in the breeze and is muttering words about DX and I still have some holidays left, so anything might happen.

If you would like to see and hear all about remarkable things that may be done with test gear in the shack as well as other items to interest all Amateurs, then you shouldn't miss the February lecture which will be given by Chris 2PZ. The date to remember is Friday, 9th February; time, 8 p.m. at the Newcastle University College, Tighes Hill. So come along, you are assured of a very educational night. And if you'd like to see the billiards champions in action, be present at Bill's tavern on the third Wednesday at 8 p.m. and maybe Bill will show you some interesting gear you've not seen before. Be seeing you at both these meetings. 73, 2AKX.

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VICTORIA

GENERAL MEETING, 7th FEBRUARY, 1962

Members are reminded that at the February general meeting, to be held on Wednesday, 7th February, it is intended to discuss the proposed Articles and Memorandum of a Federal Company, advance notice of which was given at the State Convention. This is of considerable importance, as it affects the whole Federal structure of the Institute. The proposed changes will be explained and as many members as possible are urged to attend in order that their views may be obtained.

Two short films by Mullard, of exceptional interest, will also be shown at this meeting.

MOORABBIN AND DISTRICT RADIO CLUB

After a very productive and exhilarating year in 1961 it is encouraging to commence 1962 with a President who puts his whole heart in to our progress and a committee of enthusiasts who will, as our new syllabus already shows, bring the Club to even greater heights.

To summarise our achievements, let me say that our membership rose from 85 at the commencement to 92 at the close of 1961. The National Field Day competition resulted in the Club netting 1,013 points to come a good second to the Elizabeth Club. As far as VK3 was concerned this meant the winning of the Perpetual Cup which was presented to the Club at the W.I.A. Dinner, and is now resting on a bracket especially made for it on our Club room wall. The other outstanding event for the year was our participation in the Boy Scouts' Annual Jamboree on the Air in October. Members were instrumental in giving the Third Annual Gathering of Senior Scouts who were encamped at Clifford Park, near Melbourne, on that week-end the facilities of radio communication as well as their other activities. The appreciation was universal and it would appear that this will become an annual event.

For this year our syllabus shows lectures on several subjects, film nights, 80 mx tx hunts, social nights at members' homes and barbecues. Of interest to our honorary members and to Amateurs generally is our Club net on the air on 3.8 Mc. every Monday evening at 8 p.m. This is proving popular and we would like to hear as many as can come on at that time. The net usually goes through to well after 10 p.m. and it is just a matter of breaking in when we pause between overs.

Several visits are envisaged for the year, interesting places including the Essendon Air Terminal, Victoria Brewery, Remote Receiving Station and any others of interest that may present themselves. We hope to conduct a couple of theatre nights. In all, we are quite active, a merry bunch of fellows, and worth being joined by any active Amateur in districts surrounding Moorabbin.—3LC.

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OBITUARY

BILL BROWNBILL, VK3BU

Bill Brownbill, VK3BU, passed away on the 8th January in the Alfred Hospital, Melbourne, after a long period of ill health.

Bill was particularly well known on the 80 and 40 metre bands, where he spent most of his operating time.

As a foundation member of the Geelong Amateur Radio Club, he took a keen interest in the running of the Club, being a member of the management committee at the time of his death.

The sound of his voice on 40 metres will be missed by his many friends, and some will no doubt recall his Ham activities from 1935 when he first became licensed.

To his mother and relatives we extend our sincere sympathy and condolences.

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QUEENSLAND

The December Council meeting was held in the home of Jack 4JF with the following councillors attending 4AO, 4AW, 4CI, 4DG, 4EF, 4JF, 4KB, 4KM, 4PJ and 4PR. It was decided that in future Council meetings would be held in city rooms rather than in private homes.

Three new members, Lane 4LT, K. P. O'Farrell and Iovo Gacesa are welcomed into the Division. The much publicised QSL cards from the Tourist Bureau are now on hand and members can obtain a bundle of 300 from the State distribution officer, Jack Files. Postage on the bundle is 2/3.

Members are requested to keep our meeting nights free for the next year as Col 4CI is organising a group of interesting lectures for the new year.

The v.h.f. boys might gain new recruits to their ranks as Brian 4UW is the author of a group of constructional articles, "Getting Started on V.h.f." which is currently running in the Northern Command Radio Club magazine, "Jimmy's Jargon."

Under the auspices of the Queensland Division of the Wireless Institute of Australia, the Northern Command Signals Radio Club proposes conducting classes to prepare students for the A.O.C.P. examinations to be held on July 10, 1962. Applications are to be made to the Secretary, Box 638J, G.P.O., Brisbane, who will furnish detailed information. It is hoped to start classes on 1st February.

No general meeting was held in December due to the Christmas holidays, so let's hope there will be twice as many attending the January general meeting.

For those members who like eyeball QSOs Council discussed dates and places for the next Convention. Last year the C.W.A. Hall at Nambour did not prove entirely suitable so Gordon Harley of the Wide Bay and Burnett group has undertaken to try to find a more suitable spot on the near north coast. So chaps what about making the 1962 Convention one of the best yet by attending it yourself.

This Division's membership must surely be rising because 12 new members were admitted at the January meeting.

Two nets, run here in Queensland, are worthy of mention. The first is the "Kookaburras" which starts up on approx 7068 kc at 7 a.m. daily. Following on from this at 9 a.m. are the "Kingfishers" (little Kookaburras). Call signs heard consistently are 9NT, 4ZW, QIQ, 4TK, 4UX, 4FN, 4GA, 4BJ, 4SW, 4HZ, 4SA. The Kingfishers (the sick, the idle and the rich) are like Johnny Walker, "always going strong." So you Mobileers or southern visitors come in on one of these nets and I am sure that the Queensland hospitality will be extended to you.

It is with great concern that I read 5PS' (PanSy to you also!) sabre-rattling January notes as our regular scribe (4PJ) is at present visiting VK3 land. It is our fervent desire that 4PJ returns safely and that 5PS does not hop the border [That 5 Portly Statue couldn't jump over his shadow—Editor.] and forcibly detain Peter to improve Pansy's already witty notes. I wholeheartedly agree with Pansy to call his State the moonlight State or, if I may suggest, better still the "Moonshine State" bearing in mind the VK3 gang's likeness to the comic versions of "Kentucky Moonshiners". I hope that Pansy will forgive us our plugs for our beautiful State, Land of Sunshine, Golden Beaches, Surfers Paradise, etc., etc., but I cannot help but tell the truth. 73, 4JE.

SOUTH COAST

It is pleasing to note that the vacancies in official positions have been filled and that the more even distribution of the necessary work of the Division should contribute much to greater efficiency and progress. Opportunity is taken to extend thanks to and appreciation of the work done by the various members of the old Council. To the incoming councillors is extended best wishes for a very successful and progressing year.

Regretfully we record the passing of Fred's (4VB) mother. To Fred and the family is extended the sympathy of all in his sad loss.

Congratulations to Stan 4SA in taking up his post as Station Manager and his co-operator Alf 4OL. There should be no lack of news or matters to discuss as Stan and Alf will always have something or other to converse about. Early in Dec., Bill 4WS had the pleasure of a visit from Frank 4FN whose stay, though brief, was most enjoyable.

Though the holidays have started it is known of only one Amateur visiting our golden sands and enjoying the golden sunshine and that is Roy 4FJ. We hope that the gang are enjoying themselves in the numerous and various other ways available. No matter where you made your temporary QTH, may the holidays be the best ever.

After a prolonged illness it looks like Del 4RJ might soon be on the bands again. Frank has built a new tx for him with a Geloso v.f.o. and a xtal calibrator. From reports it appears to have everything even a s.w.r. bridge. Bill and the Southport boys are arranging for the erection of an aerial for Del.

WIDE BAY AND BURNETT

Not much news has filtered down from this area in the past month. They must all be recovering from their Christmas "Does". Gordon 4GH, the President of the Wide Bay and Burnett branch, was in the Big Smoke of VK4 land at the beginning of January and attended the January Divisional Council meeting. The Bundaberg Amateur Radio Club seems to be really thriving as the unbelievable number of 20 students are sitting for the next A.O.C.P. exam. What might have caused the interest in this area? Could it be the write-up in the Bundaberg News of the meeting of Frank 4UK and Stan 4SA at the inaugural opening of the club?

Heard operating from Pialba was a visitor to this State (Note Pansy—no propaganda), John 1JF, from the Apple Isle. John was putting out a thumping signal from his portable and received good reports from all over VK4.

CAIRNS

A visitor during the month was Owen 4OV from Mt. Isa. He had some wireless gear surrounded by a caravan. He was first discovered by Arthur 4SM who wondered why his rx

SPECIAL NEWS FOR VK3 MEMBERS

The Council of the Victorian Division is pleased to announce that official permission has now been given for the W.I.A. to use the Rooms at 478 Victoria Parade, East Melbourne, for Institute functions. (See "A.R." Nov. '61, page 19 for the previous story.)

The Rooms are now open from 10 a.m. to 3 p.m. on week days. Phone 41-3535.

☆

You are requested to assist in making the VK3 Headquarters an attractive showplace. Painting, cleaning and carpentry have yet to be completed, will you volunteer to help? Michael Owen will be pleased to hear from you.

☆

Have you seen what improvements have already been made? Why not call in some time to your building?

HALLICRAFTER

MODEL SX-140 RECEIVER
MODEL SX-140K RECEIVER KIT

The SX-140 Amateur band only, high-performance low-cost receiver is completely new in design, both in styling and circuitry. Six bands: 80, 40, 20, 15, 10 and 6 metres, for c.w. a.m., and s.s.b. signals. Slide-rule dial with high tuning ratio. Light weight, compact, it has all the important features needed in a complete Amateur receiver. A perfect match for the HT40 transmitter.

FEATURES:

- ★ **High Sensitivity.**
- ★ **Sharp Selectivity.**
- ★ **Combination Selectivity-B.F.O. Control.**
- ★ **Crystal Calibrator-Band Edge Marker.**
- ★ **"Built-In" Crystal Oscillator Circuit for I.F. alignment.**
- ★ **High Tuning Ratio—25 to 1.**
- ★ **Tunes with ease, single sideband.**
- ★ **Antenna Trimmer for precision peaking of signals.**
- ★ **"S" Meter.**
- ★ **Electrical Calibration Reset.**
- ★ **Automatic Noise Limiter.**
- ★ **Matches HT40 Transmitter in styling and size.**
- ★ **Only 47 watts power drain.**
- ★ **117 volt, 50/60 cycle power input.**
- ★ **Beautifully lighted, full-length slide-rule dial.**
- ★ **Internal switching circuits can control transmitter and antenna changeover.**

Price £89-0-0

FRONT PANEL CONTROLS AND FUNCTIONS

Function. Off, Standby, a.m., c.w.-s.s.b.
Phones· Jack accommodates two-connector plug and disconnects speaker.
Band Selector: 80, 40, 20, 15, 10, and 6 metres.
Cal.-off switch energises calibration oscillator in Cal. position.
R.F. Gain Control: Controls gain of r.f. amplifier.
A.N.L.-Off switch: Reduces ignition and atmospheric noise in a.n.l. position.
Selectivity-B.F.O.: Varies i.f. selectivity on a.m. B.f.o. control on c.w. and s.s.b.
Audio Gain Controls output level of audio stage.
Antenna Trimmer: Peaks each signal for maximum output.
Calibration Reset: Permits precise calibration on all frequencies of each band.
Main Tuning: Tuning control for station selection.
In the Standby position receiver can turn on transmitter and control antenna changeover relay.

TUBES AND FUNCTIONS

6AZ8: R.f. amplifier and calibration oscillator.
6U8A: Mixer and local oscillator.
6BA6: I.f. amplifier and selectivity/b.f.o.
6T8A: Detector, a.v.c., a.n.l. and first audio.
6AW8A: Audio power output and "S" meter amplifier.
Two high efficiency silicon rectifiers in power supply.

REAR PANEL CONTROLS AND CONNECTORS

"S" Meter zero set control.
Speaker terminals.
Two pairs switched contacts for the transmitter and antenna control.
Antenna and ground connections.

CABINET

Color· Grey steel cabinet.
Size: 13¾" wide x 8¼" deep x 6⅝" high.
Weight: 14 lbs.

Sole Australian Representative:

W.F.S. ELECTRONIC SUPPLIES CO.

225-7 VICTORIA RD., RYDALMERE, N.S.W. Phone 08-1715

Sole Victorian Agent: ELECTRONIC SERVICES, Douglas St., Noble Park, Vic. Phone 746-8446
Sole South Aust. Agent: TELEVISION & RADIOTRONIC CO., 11a Gays Arcade, Adelaide
Sole Queensland Agent: GENERAL IMPORT DIST., 135 Lutzow Street, Wellers Hill, Brisbane

jumped a foot off the table, and after listening for a while he found that it was Owen camped over in the caravan park a couple of hundred yards away. He had his family with him and saw the Tableland, etc., en route. Bert 4BP looked after him when he was up there. Bert had previously spent some time with Owen while he was on his "around Australia trip" so he returned some of the hospitality.

Charlie 4BQ, accompanied by his XYL 4ZEF, called into Cairns amid a plague of sandflies and the heaviest rainfall that we have had for some time. Charlie was last seen heading north for Mossman and surrounds. He has not been heard on the air although he has a portable tx. Then, of course, putting up the aerial might prove too difficult for his XYL.

Ted 4MH took off just before Christmas for Wollongong in VK2 land. Last seen he was low flying through Townsville. It is reported that he has no gear with him and that he is going for a nice quiet holiday with his wife. Oh yeah!

TOWNSVILLE AND DISTRICT

News is very scarce this month, not much activity amongst the gang at all. Conditions on 20 mx over the Xmas period were very good. Listened in to a QSO between a ZS and a VK, and heard my call sign mentioned. Previously to this, I was nattering to 8UX, ex-5UX. Apparently the ZS was listening to me, because he mentioned to the VK, "Can 4UX natter . . ., he must have been inoculated with a gramophone needle." Anyway, I called him later and pointed out to him that I was fully qualified to natter at great length, as I am in possession of an "Ear Bashers" Certificate, which was presented to me with due ceremony some years back. However, as a qualified and "Certified" Ear Basher, I was very tolerant with him. Thinking it over later, I couldn't decide whether he was impressed by my Certificate or whether he was wary of being lured into a lengthy QSO.

Received a letter from 4RW, who usually writes these notes. He posted it as he was passing Cocos Island. How in heck did he do that? Further information leads me to believe that he has eventually reached England.

A very successful annual Xmas "Do" was held by the Townsville Radio Club at the home of Graham 4BX, who is also one of our R.I's. A majority of the members are also members of the W.I.A. A prior commitment, to wit, supervising the broadcasting of gardening talks, culture and the price of spuds, on 830 kc., prevented me from attending.

Owen 4OV from Mt. Isa is on holidays in Townsville. Bob 4MF has disposed of his rx and is still surrounded by advts. dealing with Super Super Sets. Bob thought he was being got at a few night ago, 5H3HH called him, but he was legit all right. 4DD has almost finished his new rx which I believe is extra good on s.s.b. If it's like your last one John, it must be good.

Congrats. to 4ZW on another successful pupil. Well Bas, you only have yourself to blame when the local QRM starts. I should have another four candidates for the A.O.C.P. early this year. Gosh, what am I saying. Anyway, I've had the low frequency bands to myself for nearly three years now, so I can't complain.

Things have come to a standstill with George 4GS. I'm sure that when George was a pupil of mine for the A.O.C.P. that, when dealing with the front end of a tx, I spelt it oscillation, and not osculation. However, it seems that what with buying a car and the above misspelling, George won't be on for a while.

Norm 4ND, of Home Hill, has decided to live in Ayr and has shifted into a brand new house less than 200 yards from me. So as from now Norm, I am ceasing trying to get you back on the air. But, if you do get bitten by the bug, there is plenty of DX on between 2 a.m. and 7 a.m. Not much on other times. True, I wouldn't kid you Norm.

Don't get Pansy's dig at the VK4 scribes. So will have to await the return of 4RW from overseas, to see what it is all about.

As for "crawling," you may have something there Pansy. I may get all my notes published then, and perhaps a letter or two printed in "A.R." instead of it being cast into the w.p.b. and receiving "square off" letters from "A.R." So, Mr. Editor, if you intend to "let fighting commence," print all my notes and then it won't be a one-sided fight.

The National Field Day is on again next month and members with portable gear in North Queensland will be watching with interest the high scores, under the present system, that will be put up by the VK3 boys. But, can I fight with other Divisions per these notes, or is the fighting to be limited to VK5, with VK4 on the receiving end. Remember, Mr. Editor, you said it! [I am neither 4 nor against; the odds are 5/4.—Ed.]

Well fellows, that's the lot for this month. I have some Command gear that I want to get going for the N.F. Day, so cheerio, 73, 4UX.

SOUTH AUSTRALIA

The monthly general meeting of the "Moonlight State," VK5, was held in the clubrooms to a capacity gathering of members and visitors, and took the form of a Xmas Get-together. I would say without hesitation that the gathering was the largest we have had in the new clubrooms for a Xmas meeting, and I would say also without hesitation that it was the most successful and smoothest run of such functions. Apparently Council had profitted from the lessons learnt at the last such gathering and came out with flying colours this year. Nothing was left behind at home, the milk position was in the capable hands of Gilbert 5GX, spoons for the tea were in abundance, in fact try as hard as I can, I cannot rake up even the smallest of grizzles. This upsets me of course. How can I pad this part of the notes without the help of Council and a few of their falls from grace, although, as I always have said, they would do anything, even keep on the straight and narrow, if they thought it would stop me from writing.

The meeting opened at 8 p.m. and the Chairman, John 5JC, ever his canny self, forestalled the members by announcing that all business would be cancelled for the night and his being so quick to beat the members, caused two or three of them to almost swallow their tonsils, so anxious were they to beat him to the punch. Visitors were then introduced and the entertainment commenced, taking the form of the usual three interesting and enjoyable films, two by Walt Disney, and all in colour at that. Now I realise that this type of entertainment is either liked intensely, or disliked immensely, but speaking personally, and with the applause of the members still ringing in my ear, I can only say that the films were thoroughly enjoyed by all present. To Neil 5ZAW and Ray 5BT, who were responsible for picking of the films, and the projection of same, in that order, go the thanks of the audience. At this point in the proceedings the chairs were cleared, George 5RX distributed the cards, and then the tables were loaded with the lolly water and the goodies, and battle commenced. Tall stories, impossible stories and even downright lies passed back and forth with the speed of a tennis ball, to the obvious enjoyment of all, and I suppose to be truthful, I must say that this part of the evening's entertainment ranked number one.

This year, by the way, there were several young, pretty, and demure YLs and XYLs present for the first time in the history of such gatherings, and I cannot but feel that this was the writing on the wall for Council to consider in the future. Just how you feel about it I would not know, but I would suggest that if anybody feels that a mixed Xmas Get-together is a good idea, then earmark the subject for discussion at a future meeting and don't hesitate to get up on your feet because after all the majority wins in our democratic set-up and anything that will help the YLs and XYLs to appreciate our hobby should be tried out.

The R.I's. were well represented at the meeting by Mr. P. Traynor, Mr. C. Pike, and last but by no means least (I'll get on), Mr. D. Caudle. These estimable gentlemen (I'll still get on), when introduced to the assembled peasants, were greeted with the customary applause, cheers, and hoots from those somewhat hidden from view, which all goes to show how democratic we are in the Moonlight State (VK4 please copy). I was a bit unlucky with my hoot and after all my practice too, but just as I was getting under way, Mr. Pike looked fair and square at me, and my still-born hoot became a mixture of a wolf whistle and a smoker's cough. The fact that he took out a little book and made an entry in it was a little disturbing at first, but after all why not live dangerously. What am I saying!

Arch 5XK, the man who put the owe in Norfolk Island, has returned from that locality, where he spent a very enjoyable holiday to the accompaniment of DX calls and answers by the millions. He and his XYL led the DX-pedition to the island a good time was had by all. Idle rich. Pooh!

Doc 5MD was not at the meeting as he is still not 100 per cent. after a bad time with eye trouble. He had a sojourn in hospital and has been on sick leave for the past month or so. Latest reports indicate that he is nearly right now, although he still has a week or so of sick leave.

Jim 5JK was another one who was absent from the meeting. Jim's XYL has been hospitalised for a short period and as soon as she came home, Jim decided to cut himself a piece of cake and down he went for a few days. Apparently the household chores took it out of him. They tell me that he boils a ducky kettle of water!

At tremendous cost and under threat we finally obtained THE photo. Reading left to right: John Hazeldine (VK5JC, President of VK5), Ray Tuck (VK5BT) and MR. Parsons (VK5PS).
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Jack 5JS reported on his way down to Nhill for the Xmas break. Is talking portables and mobiles, so apparently some activity will be evident from the wilds of VK3. Watch those VK3 jokers Jack, take one eye off them and they bite. All my bad luck comes from VK3, what with Ye Eds., Federal Executive, Magazine Committees, Pincotts and low types who give their old chassis to s.w.l's., to say nothing of Federal QSL Bureaus, rolling in shekels, who dash off to Europe, etc., for week-ends at the drop of a hat, I keep a watchful eye on them. Don't ignore the Gypsy's warning, Jack.

My anonymous Xmas friend, who at this time of the year sends me jam tins, fruit tins, biscuit tins, buckets, and any assorted types of hardware that hits his agile mind, gave me a respite this year. He only sent me through the post a dog's bone, label and insults complete. No wonder the postman crosses the road when he sees me coming down the street.

My undercover man for January tells me that Luke 5LL had a lucky escape in a car accident just before Xmas. It appears that a New Australian was tearing down the main road at about 200 miles an hour and decided that Luke was not entitled to any of the road, bounced off his car, knocked a taxi rotten, and then cleaned up several yards of kerbing. Aside from telling the N.A. a few facts about himself, querying his parentage, and giving him some facts about his driving, "Iron Man Lucas" drove off, dented but undeterred. I could just imagine what Luke said.

At the time of writing, there is a general exodus from our fair city for the Xmas season. Jack 5JS to Nhill, Luke 5LL to Lucindale, Vern (The Admiral) 5ZAH to Maitland for

Xmas, then to VK2 and VK3; Frank 5MZ to Port Lincoln, and only one entry into Adelaide reported, Claude 5CH from Mount Gambier.

Carl 5SS, when asked by our reporter when he was leaving Adelaide for a Xmas holiday, plaintively replied, with tears in his voice, "Who would feed the birds?" Before our reporter could open his mouth, the birds started up in shrill complaint at the mere idea of Carl leaving them, and one of the galahs had the audacity to say to the reporter, "Pull your head in Dad." How cheeky can these birds get?

Brian 5ZBI came down to our fair city from Maitland for a short visit, parked his car alongside a parking meter in the main street, walked off without putting in his sixpence and is now moaning to all and sundry because the City Council has QSLd him direct. Visiting the city soon OM?

Howard 5XA is indignantly denying that he is in a heck of a hurry to build up some 6 mx gear, despite all the affirmatives from the gang. My spy tells me that anybody knowing how much Howard talks about 6 mx, and how he praises it up to all and sundry on the air on 7 Mc., would have no doubt that eventually he will be a dyed-in-the-wool 6 mx addict!

Alan 5ZC will have walked up the aisle on 13th January. There is no truth in the rumour that several of the boys formed a guard of honour with crossed 813s as he and his charming bride left the church. Just where do these rumours start?

Met a newcomer to VK5 at the Xmas meeting, and although I know his call sign was 5RC, I know he lives at Salisbury, and I know that he is an ex-G, I am not sure of his christian name. I think it is Joe, but fancy if it was Pat or Mick, wouldn't he be annoyed. He told me that he knew our tame Scotchman, Dave 5DS, back home and when he someday is in QSO with Dave, in the near future, then VK5 will have two of the kilt fraternity to listen to and puzzle out what they are saying. Heaven forbid! Although one of them might be able to play the bagpies. I surrender.

Rex 5DO sighted en-route for VK3 complete with t.v. set and the kitchen sink. I felt like stopping him and telling him that they had t.v. in VK3 but I did not have the heart. After all, his XYL Doris might have been annoyed with me and made a special trip down to my shack with a barrow load of concrete.

The South East gang had their Xmas Get-together on the 21st of the month and a good roll-up resulted. A good time was had by all and the entertainment consisted mainly of earbashing and feeding of the inner man. The XYL of Erg 5KU provided one of her world famous massive sponges and the boys did it justice in no uncertain manner, so much so that rumour has it that she is to be honoured at the next Queen's Birthday. In fact, I will let you into a closely guarded secret. She will probably receive a medal as big as her sponge and as Erg will have to wear it, it will probably make him bandy.

Leo 5GJ was not at the meeting and it would appear that he has not yet thrown off the tentacles of the "one eyed monster". However, hopes are held out for his return to the ranks.

Claude 5CH has been rather busy at Bordertown installing a new engine at the local power station. Understand that he is coming down to the city of Adelaide for Xmas and if so he will probably call into the Best Broadcasting Station in VK to see me. You have not heard that one for a while, have you?

Stuart 5MS is getting a few new ones on the bands, but has had to resort to s.s.b. to do so. He is apparently not at his usual top form, he could not face the sponge at the meeting. See what s.s.b. can do for you? Even puts you off your food.

Erg 5KU is still picking up a few new ones on 7 Mc. c.w., probably because the DX are starting to hear about the size of the sponge and want to cut themselves a slice of cake. Get it? Cut them a slice of cake. Pretty smart, eh? Oh all right, could you do better?

David 5AW is leaving Penola early in February. Everybody is sorry to see him go, but all wish him luck and feel sure that he will be an asset to his new place of appointment. Where is he going? Well I have not been told, but as a special favour to you I will gaze in my crystal ball and find out.

Col 5CJ has been keeping the now famous lunch time sked on 7 Mc. and at the same time listening in vain for the powerful signal which indicates that 5PS is on the air. Well to be truthful, Col, I have been having a little trouble with my coherer, it says peep when it should say poop. Never mind, I will master it yet, it never used to do it back in 1903.

Dale Aslin is patiently waiting for his call sign and is all geared up to give 6 mx a bashing. Several of the S.E. short wave listeners' group are sitting for the January A.O.C.P., and whilst this is somewhat belated, everybody wishes them all the best. Personally, I found the first twenty times that I sat for the exam the hardest!

Ken 5IM returned from a sojourn in hospital on Xmas Eve and sounds like his old self. No details of his operation to hand but apparently all is well.

Carl 5SS has been very busy planting a lawn and despite considerable proddings on the part of all interested, the "Big" rig is no nearer completion. There has been a suggestion to put the axe through the 288 Mc. rig, which everybody claims is the main cause of his not finishing the job, but so far nobody will "bell the cat".

Max 5OS is another one who is making heavy going with rig building, although the latest reports state that he has soldered a further two wires on his "Quack-Quack" rig, so at least we can say that he is progressing.

Claude 5CH, as earlier reported, is in town and paid a courtesy call on Frank 5MZ, but did not call in to see me this time. Probably someone has been talking about me. Take no notice of them Claude, I am flattered in all directions. George 5CV and Jim 5PM also called in to see Frank 5MZ and exchanged the compliments of the season.

My spies tell me that Arch 5XK had "George" from Norfolk Island stopping with him for the Xmas season. Reminded me of the time that the late Ross Kelly (5LW) was the native lighthousekeeper on a lighthouse far out in the Pacific, who could never finish a QSO because the light kept on blowing out! Ho ho, and a couple of Har har's.

There is no doubt that travel broadens the mind, and Jack 5JS will bear me out. Just returned safely from the wilds of Nhill, he tells me that he had to go all that far to find out that Luke 5LL was baptised Gil. Just goes to show you, and Jack has been associated with Luke, sorry, I mean Gil, for more years than I would like to confess to!

Well, the red pencil is poised for action again, so I had better shut up. However, I must draw your attention to the mention of my call sign in last month's DX notes, although the remarks of Ye Ed. cut me to the quick, and I would also like to know who was the Radio Amateur in VK5 who gave his mother-in-law an old fashioned straight-backed iron chair for the garden, for Xmas? But his XYL would not let him connect it up!!

73 de 5PS (PanSy to you).

— . . . —

TASMANIA

The December meeting of the Division was graced by an address from Ken, ex-VK7KM, who has been back in Tasmania after an absence of three years, mainly spent in the United States. Ken's address dealing with certain aspects of space research was delivered to a public gathering at the University, and was extremely well received by those privileged to attend.

The holiday season is again with us and Ken 7KA, Doug 7DW, Ted 7FJ and Jack 7JB have all been away just enjoying themselves. David 7ZAI and Brian 7ZBE have both been to Launceston at the direction of their employer, and Ted 7EJ spent a week in Melbourne following a similar direction from his boss.

The December v.h.f. meeting is fast becoming the Christmas celebration for this Division and this meeting in 1961 from that point of view was an outstanding success. It was held at the home of Barney 7ZAK and it continued to the small hours of the next morning. A wonderful time was had by all.

Plans are nearly complete for the repeat of the VK7WI official broadcast at 2030 hours on the Sunday concerned. This repeat is being conjured up to meet the needs of the country, northern and north-western members who have been experiencing difficulty in reading the morning broadcasts for several months. Jack 7JB, Charlie 7KS and Terry 7CT are to be congratulated for extending this very worthwhile service to the members of this Division.

Ted 7EB has been getting some of that elusive DX just recently and he bagged Finland, Peru and Malaya over the New Year break, just to whet his appetite for more. DX conditions have been uncertain and erratic for the past few weeks and the Ws have been much rare than usual. Europe on the other hand on 14 megs. late at night has been quite good. I too have had quite good results after midnight.

Remember the National Field Day Contest in February. If you can, go portable, and have the fun which is there for the taking. Otherwise, give the portable boys a good time by working them from your home station—that is fun too. 73, 7ZZ.

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DC	3930	FT	4676	DC	5285	FT	5780	FT	6265	FT	6840	DC	7962.8
DC	3970	FT	4695	FT	5295	FT	5782	FT	6300	FT	6890	DC	7810
DC	3995	FT	4730	LP	5300	DC	5810	DC	6350	FT	6935	DC	8036.2
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FT	4180	FT	4780	FT	5437	FT	5910	LP	6470	FT	7200	DC	8469.23
FT	4235	FT	4815	DC	5515	LP	5910	FT	6515	LP	7205	DC	8645.45
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DC	8019	DC	8025.5	DC	8032.5
DC	8019.5	DC	8026	DC	8033
DC	8020	DC	8026.5	DC	8033.5
DC	8020.5	DC	8027	DC	8034
DC	8021	DC	8027.5	DC	8034.5
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